FINAL

Baseline Biodiversity Survey for Stoneridge Preserve

Prepared for:

County of San Diego
Department of Parks and Recreation
5500 Overland Avenue Drive, Suite 410
San Diego, California 92123
Contact: Jennifer Price

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Brock Ortega

DECEMBER 2012

Printed on 30% post-consumer recycled material.

TABLE OF CONTENTS

Section **Page No.**

TABLE OF CONTENTS (CONTINUED)

Section **Page No.**

APPENDICES

TABLE OF CONTENTS (CONTINUED)

Page No.

LIST OF FIGURES

LIST OF TABLES

INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS

ACOE	U.S. Army Corps of Engineers
AMSL	above mean sea level
AOU	American Ornithologists' Union
APN	Assessor's Parcel Numbers
ASMD	Area-Specific Management Directive
BMO	Biological Mitigation Ordinance
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CDFG	California Department of Fish and Game
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
DPLU	County of San Diego Department of Planning and Land Use
DPR	County of San Diego Department of Parks and Recreation
FRAP	Fire and Resource Assessment Program
FMP	Framework Management Plan
GIS	geographic information system
GPS	Global Positioning System
IA	index of abundance
IEMM	Institute for Ecological Monitoring and Management
MSCP SAP	Multiple Species Conservation Program Subarea Plan
NABA	North American Butterfly Association
PAMA	Pre-Approved Mitigation Area
PDS	Department of Planning and Development Services
RMP	Resource Management Plan
SDMMP	San Diego Management and Monitoring Program
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCM	Vegetation Classification Manual for Western San Diego County

INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

The County of San Diego Department of Parks and Recreation (DPR) acquired the 248-acre Stoneridge Preserve (referred to as Preserve hereafter). The Preserve is included in the Multiple Species Conservation Program Subarea Plan (MSCP SAP) preserve system. DPR proposes to manage the Preserve in accordance with a Resource Management Plan (RMP), including Area-Specific Management Directives (ASMDs). The RMP will be prepared based upon the survey information contained within this report.

Dudek biologists performed the following biological inventory surveys within the Preserve from spring through summer 2012: vegetation communities mapping; rare plant surveys; invasive plant species mapping; butterfly surveys and habitat assessment for Quino checkerspot (*Euphydryas editha quino*) and Hermes copper (*Lycaena hermes*) butterflies; herpetological pitfall trap surveys; diurnal and nocturnal avian point count surveys; passive bat surveys; small mammal trapping; and large and medium mammal surveys using remote camera stations.

Based on the Vegetation Classification Manual (VCM) for Western San Diego County, seven plant alliances, associations, or semi-natural stands were identified within the Preserve: coast live oak woodland alliance, chamise chaparral–coastal sage scrub association, chamise chaparral–mission manzanita alliance, California sagebrush–California buckwheat–laurel sumac association, San Diego sunflower–California sagebrush–California buckwheat association, woolly-leaved ceanothus association, and annual brome grasslands semi-natural stands. A total of 162 plant species were recorded within the Preserve during surveys. Four special-status plant species were observed. A total of 115 wildlife species were observed or detected in the Preserve during surveys, including 34 invertebrates, 1 amphibian, 10 reptiles, 43 birds, and 27 mammals. Twenty-five special-status wildlife species were observed or detected in the Preserve, including seven species covered under the MSCP SAP.

INTENTIONALLY LEFT BLANK

1.0 INTRODUCTION

1.1 Purpose of the Report

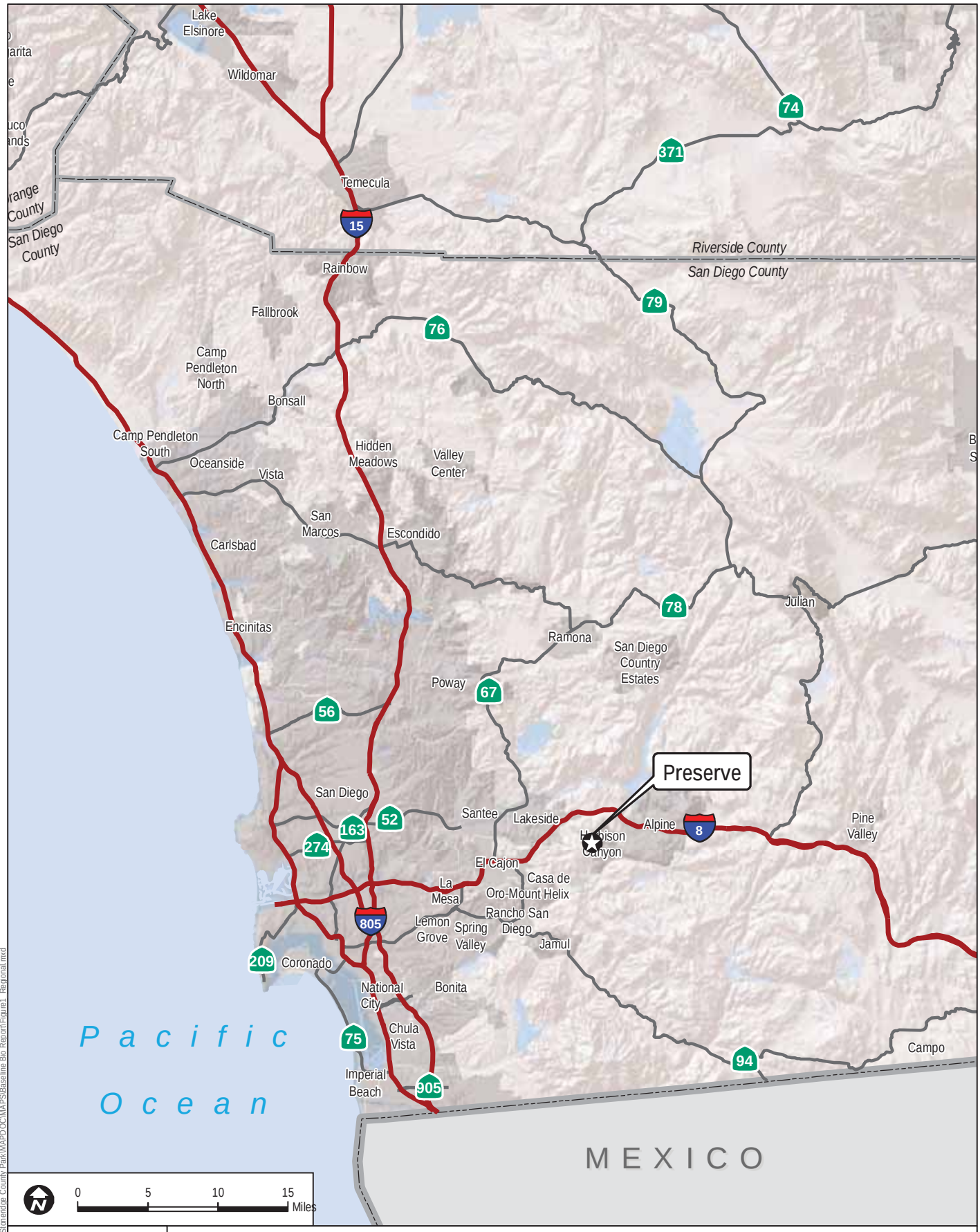
Baseline biological resources surveys were conducted within the County of San Diego Department of Parks and Recreation (DPR) Stoneridge Preserve (Preserve) (Figures 1 and 2). The purpose of these surveys was to identify and map existing biological resources. This information will be utilized to develop a Resource Management Plan (RMP) including area specific management directives (ASMDs). These ASMDs will provide the management framework for monitoring and managing the Preserve's resources.

1.2 MSCP Context

The Preserve is located in the MSCP SAP, specifically the Metro-Lakeside-Jamul segment, and is designated as a Pre-Approved Mitigation Area (PAMA) (County of San Diego 1997) (Figure 3a). PAMA are areas within the MSCP SAP with high conservation values and are important to the success of the regional preserve system.

Conserved lands are located to the south, west, and northeast of the Preserve and are included as PAMA in the MSCP SAP (Figure 3b). U.S. Fish and Wildlife Service, the California Department of Fish and Game, and private homeowners associations own these conserved lands. Areas located east and west are designated as Unincorporated Land in the Metro–Lakeside–Jamul Segment and have low-density use that is compatible with species conservation and improving habitat connectivity in the region. Open space surrounds much of the Preserve to the northeast and south.

INTENTIONALLY LEFT BLANK



DUDEK

6680-09

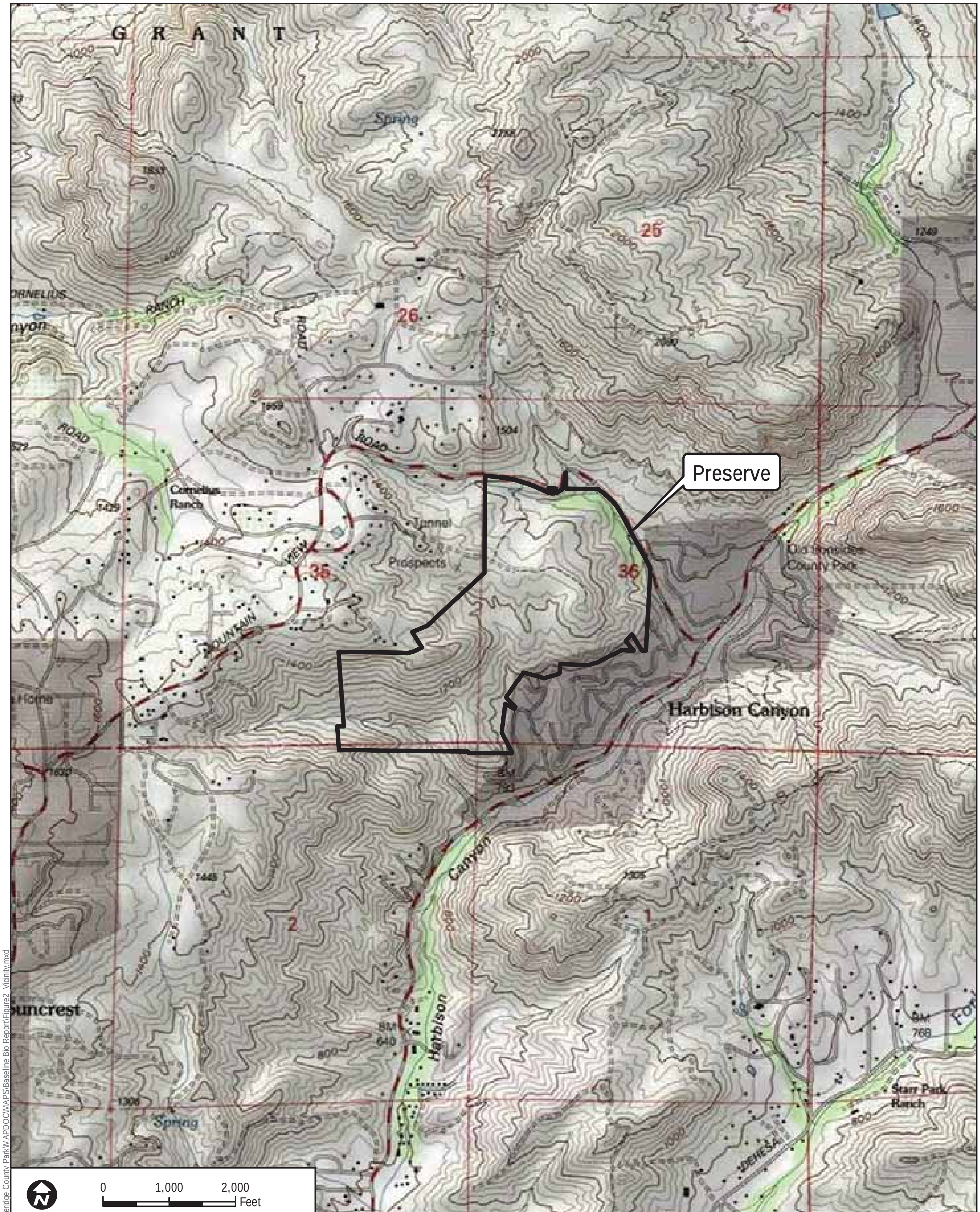
FIGURE 1

Regional Map

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680\6680\668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure1_Regional.mxd

INTENTIONALLY LEFT BLANK



DUDEK

6680-09

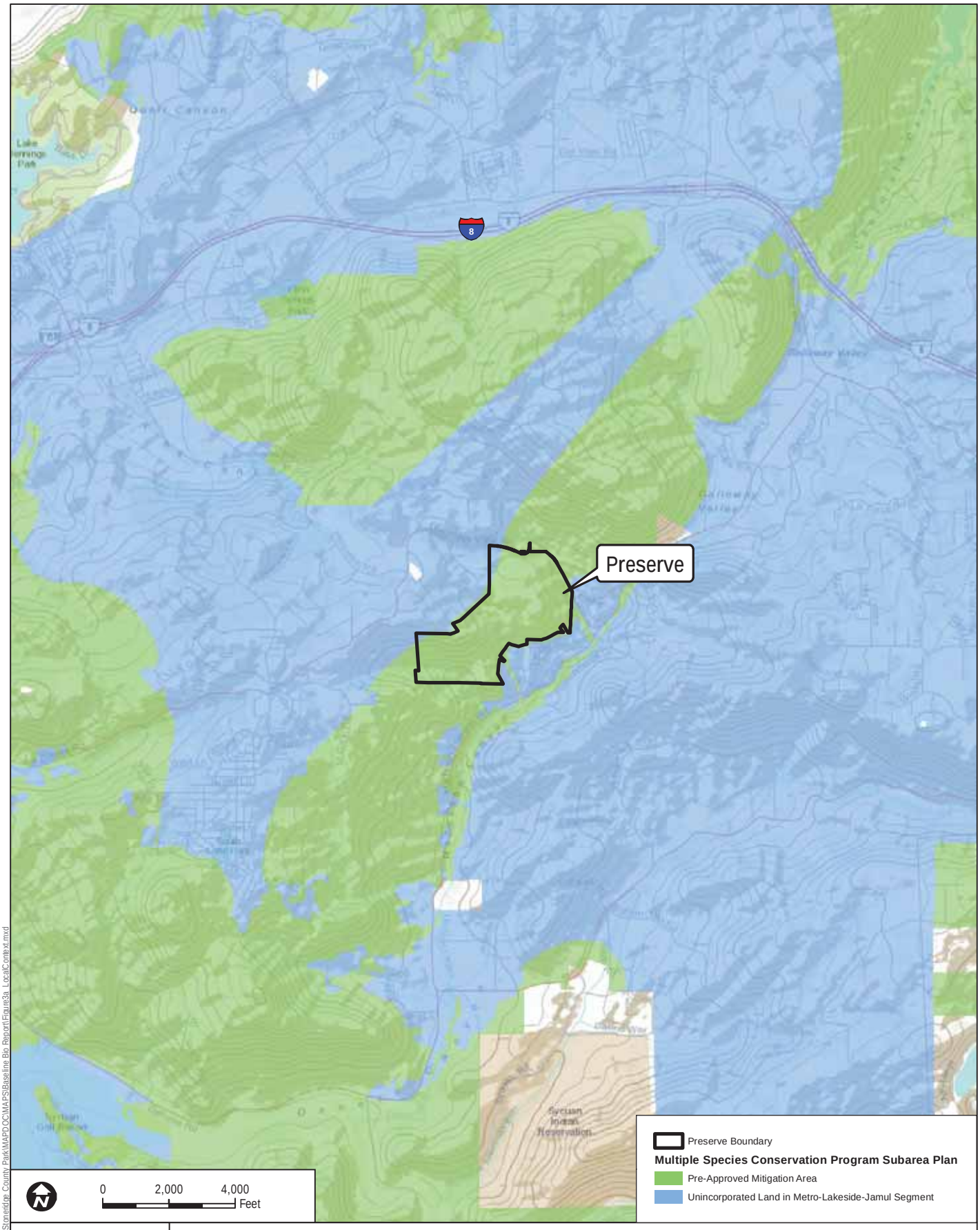
SOURCE: USGS topo 7.5-Minute Series Quadrangle

FIGURE 2
Vicinity Map

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\j668000\668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure2_Vicinity.mxd

INTENTIONALLY LEFT BLANK



DUDEK

6680-09

SOURCE: USGS, SanGIS 2012

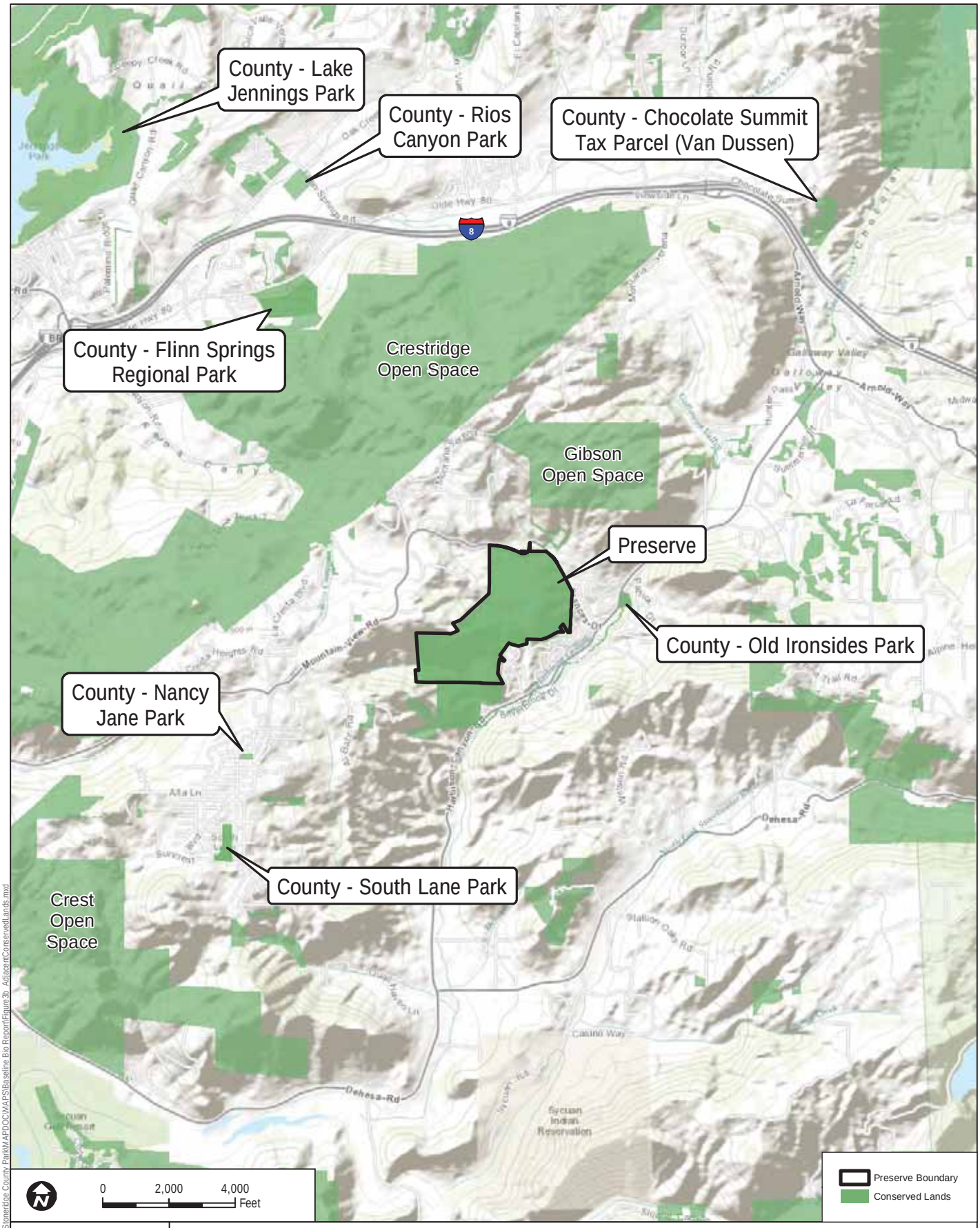
FIGURE 3a

MSCP SAP Designations

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680\6680\6680009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure3a_LocalContext.mxd

INTENTIONALLY LEFT BLANK



DUDEK

6680-09

SOURCE: USGS, SanGIS 2012

FIGURE 3b

Adjacent Conserved Lands

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680\6680\668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure3b_AdjacentConservedLands.mxd

INTENTIONALLY LEFT BLANK

2.0 PRESERVE DESCRIPTION

2.1 Project Location

The Preserve is generally located within Harbison Canyon, east of the City of El Cajon, in Central San Diego County (Figure 1). Specifically, the Preserve is bounded to the northwest by Mountain View Road and to the southeast by Harbison Canyon Road. The Preserve is mapped on the U.S. Geological Survey (USGS) 7.5-minute Alpine quadrangle: Township 15 South, Range 1 East, Sections 35 and 36 and Township 16 South, Range 1 East, Sections 1 and 2 (Figure 2).

The Preserve is composed the following Assessor Parcel Numbers (APNs): 399-030-06, 399-030-16 (portion), 399-030-18, 399-030-19, 399-030-20, 399-030-021, 399-290-04, 401-101-10, 401-101-11, 401-101-12, and 401-101-13.

2.2 Geographical Setting

The Preserve is located in the coastal foothills of the Peninsular Ranges of Southern California and is composed of hilly terrain (the majority of the Preserve has a slope gradient of at least 30º) ranging in elevation from approximately 264 to 405 meters above mean sea level (AMSL) (867–1,330 feet).

The topography of the Preserve is determined primarily due to proximity to the Peninsular Range, which creates relatively hilly terrain. The Preserve has three vegetated riparian corridors that flow generally south through canyons. One prominent ridgeline dominates the topography of the northern half of the Preserve, and steep hillsides dominate the southern half.

2.3 Geology and Soils

The Preserve contains seven soil types belonging to four soil series: Cieneba very rocky coarse sandy loam, Fallbrook sandy loam, Fallbrook–Vista sandy loam, Las Posas fine sandy loam, Las Posas stony fine sandy loam, Vista coarse sandy loam, and Vista rocky coarse sandy loam (Figure 4) (USDA 2010). Fallbrook sandy loam is not included in Figure 4, because it is mapped over such a small area that it is not visible in the figure. A brief description of each soil series and the associated soil type is provided below.

Cieneba Series

Cieneba very rocky coarse sandy loam is the representative of the Cieneba series mapped within the central and southern portions of the Preserve. Cieneba soils are very shallow and excessively drained and are characterized by low to medium runoff and moderately rapid permeability. Cieneba soils are found in uplands with slopes varying from 9% to 85%. Typical vegetation

found on this soil series is chaparral, including chamise chaparral (*Adenostoma fasciculatum*). The Cieneba Series occurs in the Coast Range of the Central and South-Central California foothills of the Sierra Nevada (NRCS 2012).

Fallbrook Series

Fallbrook sandy loam and Fallbrook–Vista sandy loam are the representatives of the Fallbrook series, both found within the eastern portion of the Preserve. This series consists of deep, well-drained soils formed from granitic rocks. The Fallbrook Series is found on rolling hills with slopes of 5% to 75%. Fallbrook Series has moderately slow permeability and runoff varies from medium to rapid. Annual grasses, forbs, chaparral, chamise, buckwheat (*Eriogonum* spp.), and other shrubs are typical native vegetation found on soils in the Fallbrook Series. The Fallbrook Series occurs in San Diego County and in the foothills east of the San Joaquin Valley (NCRS 2012).

Las Posas Series

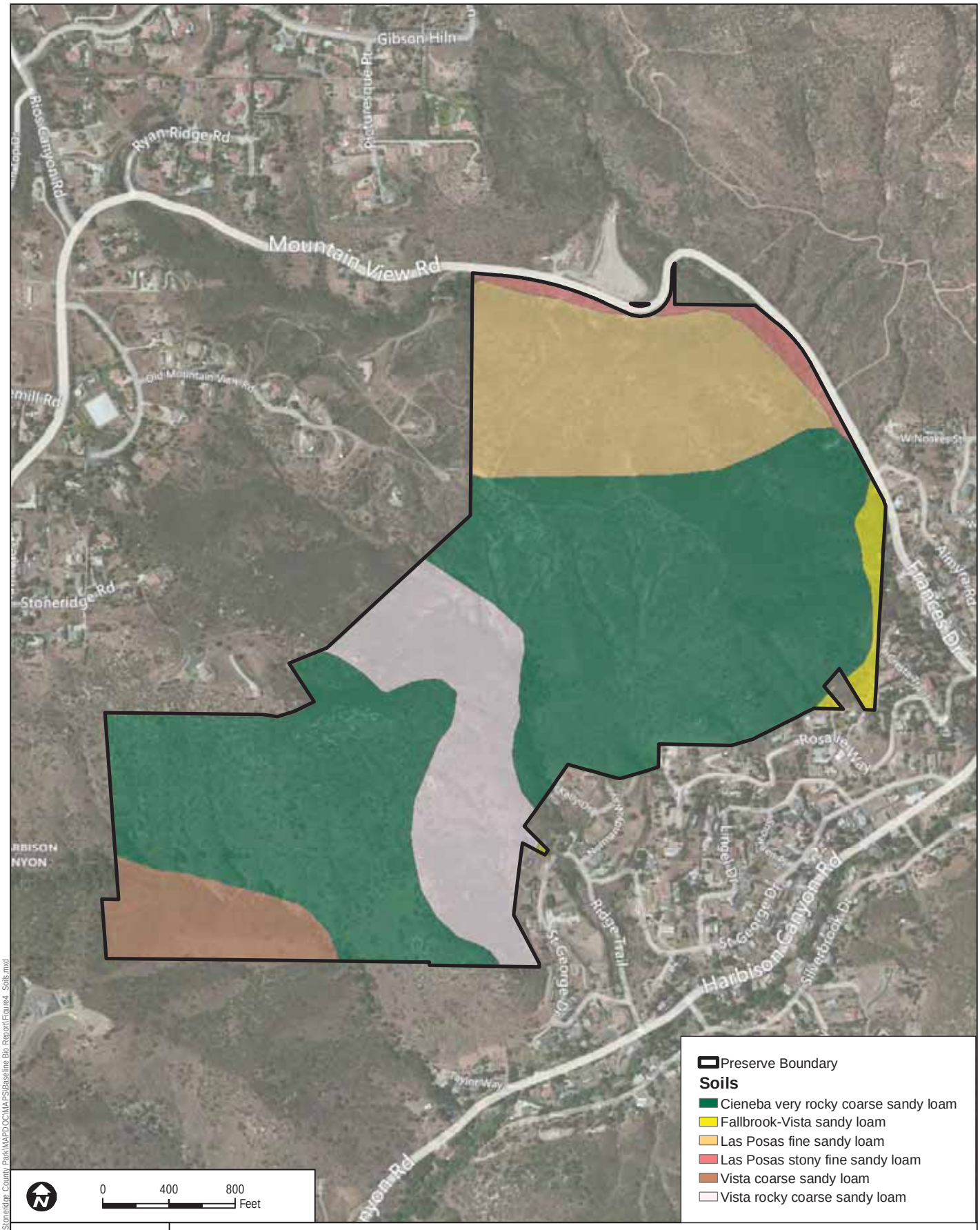
Las Posas fine sandy loam and Las Posas stony fine sandy loam are mapped within the northern portion of the Preserve. This series is composed of moderately deep, well-drained soils formed from igneous rocks. This series is found on mountainous uplands, with slopes of 5% to 50%. These soils have slow permeability and runoff varies from medium to rapid. Annual grasses, forbs, and chaparral are typical native vegetation found on soils in the Las Posas Series. The Las Posas Series occurs in the foothills of Southern California and the Sierra Nevada (NCRS 2012).

Vista Series

Vista coarse sandy loam and Vista rocky coarse sandy loam, in the Vista Series, are located in the southwestern and central portions of the Preserve, respectively. The Vista Series consists of moderately deep, well-drained soils that formed from decomposed granitic rocks. Vista soils are found on hills and mountainous uplands and have slopes of 2% to 75%. These soils have moderately rapid permeability, and runoff varies from slow to rapid. The Vista Series occurs in Southern California and Sierra Nevada foothills (NCRS 2012). Within the Preserve, these soils are mapped along the faces of canyons.

2.4 Climate

As with most of Southern California, the regional climate in the vicinity of the Preserve is influenced by the Pacific Ocean and is frequently under the influence of a seasonal, migratory, subtropical high-pressure cell known as the Pacific High (WRCC 2012a). Wet winters and dry summers with mild seasonal changes generally characterize the Southern California climate. This climate pattern is occasionally interrupted by extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds (WRCC 2012a).



DUDEK

6680-09

SOURCE: Bing, USDA Soils 2010

FIGURE 4

Soils Map

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680\6680\6680009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure4_Soils.mxd

INTENTIONALLY LEFT BLANK

However, there is some local variance in the typical Southern California climate. The influence of the Pacific Ocean on the Preserve is lessened due to its inland location. As such, temperatures are subject to much more variability on a daily and seasonal basis than other areas in the region. The average high temperature calculated from October 1952 to June 2012 for the surrounding Alpine area is approximately 76.4º Fahrenheit (F), with higher temperatures in summer and early fall (June through September) reaching up to an average of 88°F (WRCC 2012b). The average low temperature for the same period is approximately 42°F during winter months. The mean annual precipitation for the area is 16.15 inches, with most rainfall concentrated in the months of January (2.91 inches), February (3.18 inches), and March (2.97 inches) (WRCC 2012b). Less rainfall occurs during summer months and is typically less than one inch (WRCC 2012b). In Alpine, the 2011–2012 season (July through June) cataloged 16.29 inches of rain, while the 2010–2011 season cataloged 22.86 inches of rain (WRCC 2012b).

2.5 Hydrology

The Preserve is entirely within the Sweetwater Watershed (Figure 5). The northern region of the Preserve generally drains southwest through a riparian corridor along the northern and northeastern border. The central region of the Preserve drains through a smaller canyon (not visible on Figure 5), and the southwest region of the Preserve drains through a third canyon. These three drainages converge at Harbison Canyon and flow into the Sweetwater River. Residential development surrounds much of Harbison Canyon and the Sweetwater River, which likely affects water quality. The Sweetwater River flows southwest from the Preserve to the San Diego Bay in Chula Vista, California, (Project Clean Water 2012).

The Sweetwater Watershed contains two water storage reservoirs, the Sweetwater and Loveland Reservoirs. Habitat types throughout the watershed include extensive riparian habitat, chaparral, coastal sage scrub and coastal salt marsh near the San Diego Bay. The reservoirs within the Sweetwater Watershed supply water to as many as 300,000 residents in the region (Project Clean Water 2012).

2.6 Fire History

Based on historical fire perimeter data from the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) (FRAP 2012)[1], five fires have affected the Preserve (Figure 6). An active fire regime is characteristic of the

[1] Based on polygon geographic information system (GIS) data from the CAL FIRE's FRAP, which includes data from CAL FIRE, USDA Forest Service Region 5, Bureau of Land Management (BLM), U.S. National Park Service (NPS), contract counties, and other agencies. The data set is a comprehensive fire perimeter GIS layer for public and private lands throughout the state and covers fires 10 acres and greater back to 1878.

surrounding region, as most of the Preserve (176 acres or 72%) has burned four times, and a small portion (15 acres or 6%) has burned five times since 1947.

The 1970 Laguna Fire burned the entire Preserve. At the time, this was the largest fire in California since 1890 and was caused by downed power lines during a Santa Ana wind event (Western Institute of the Environment 2008). In 2003, the Cedar Fire surpassed the Laguna Fire as the largest fire recorded in California's history. The Cedar Fire burned the entire Preserve except for a small portion in the north.

The interval between wildfires is highly variable. The time interval between the Cedar Fire and the Laguna Fire was 33 years, although the 1960s were characterized by short fire intervals. Table 1 presents the fire interval data for the Preserve.

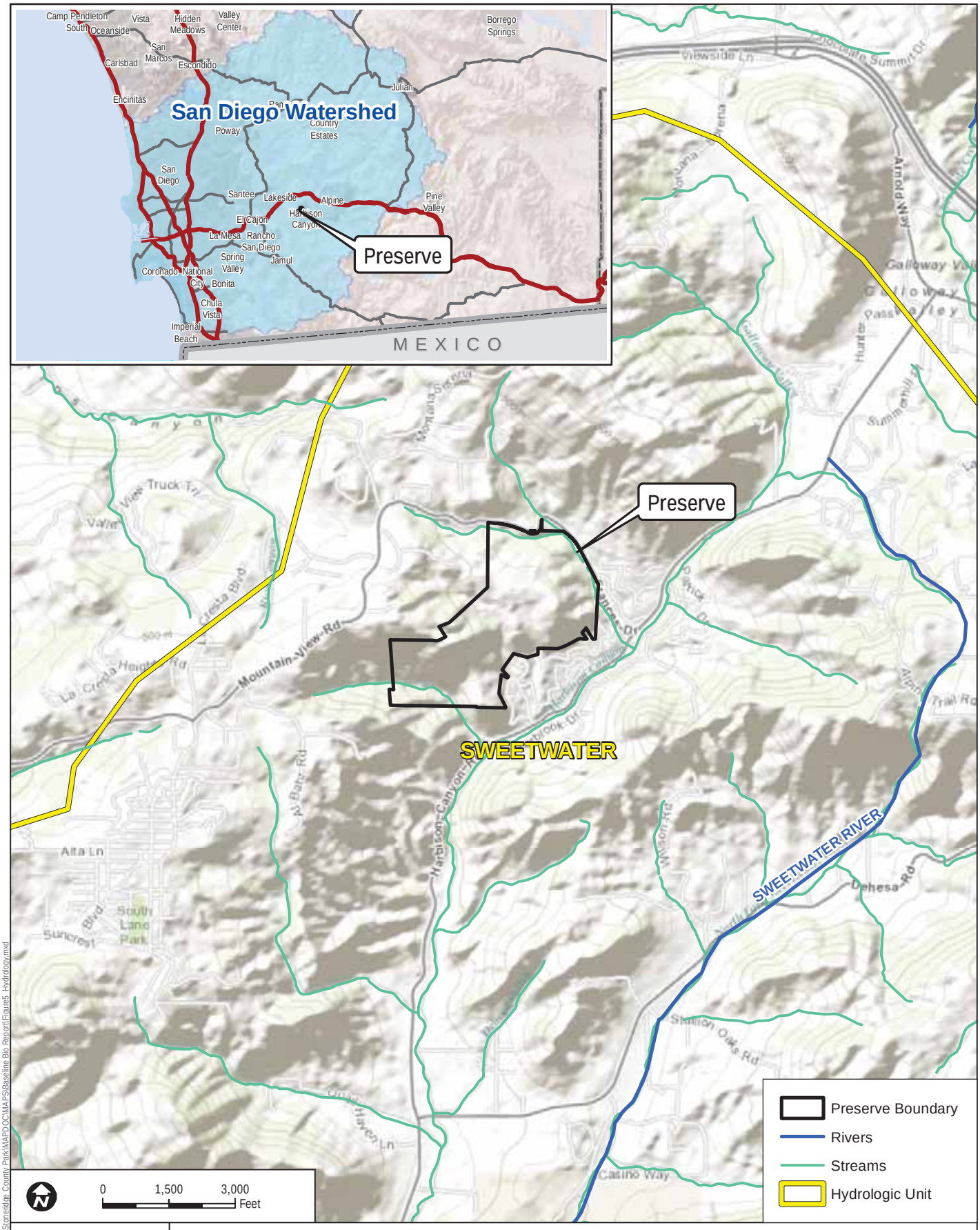
Table 1
Preserve Fire Interval Data

Fire Year*	Fire Name	Interval (years)	Acreage Burned	Percent of Preserve Burned**
1947	No Name	—	223.8	92%
1965	Suncrest	18	34.2	14%
1967	Harbison Canyon	2	191.8	79%
1970	Laguna	3	246.4	100%
2003	Cedar	33	223.8	92%

*FRAP 2012
**Based on the 248-acre total acreage of the Preserve

2.7 Trails

There is one main unauthorized dirt access trail and one overgrown unauthorized trail found within the northern area of the Preserve (Figure 7). The dirt access trail begins at Old Mountain View Road, continues south until it reaches the ridge, and heads east along the ridge. Most of the wildlife surveys were performed in proximity to this trail to facilitate access. The second trail is mostly overgrown with shortpod mustard (*Hirschfeldia incana*) and grasses (e.g. *Bromus* spp.), and allows access from Mountain View Road to the dirt trail along the ridge. Within the southern region of the Preserve, access is extremely limited. One small dirt trail leads up the peak at the southern region of the Preserve and is located off St. George Drive.



Z:\Projects\6680\6680\668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure5 Hydrology.mxd

DUDEK

6680-09

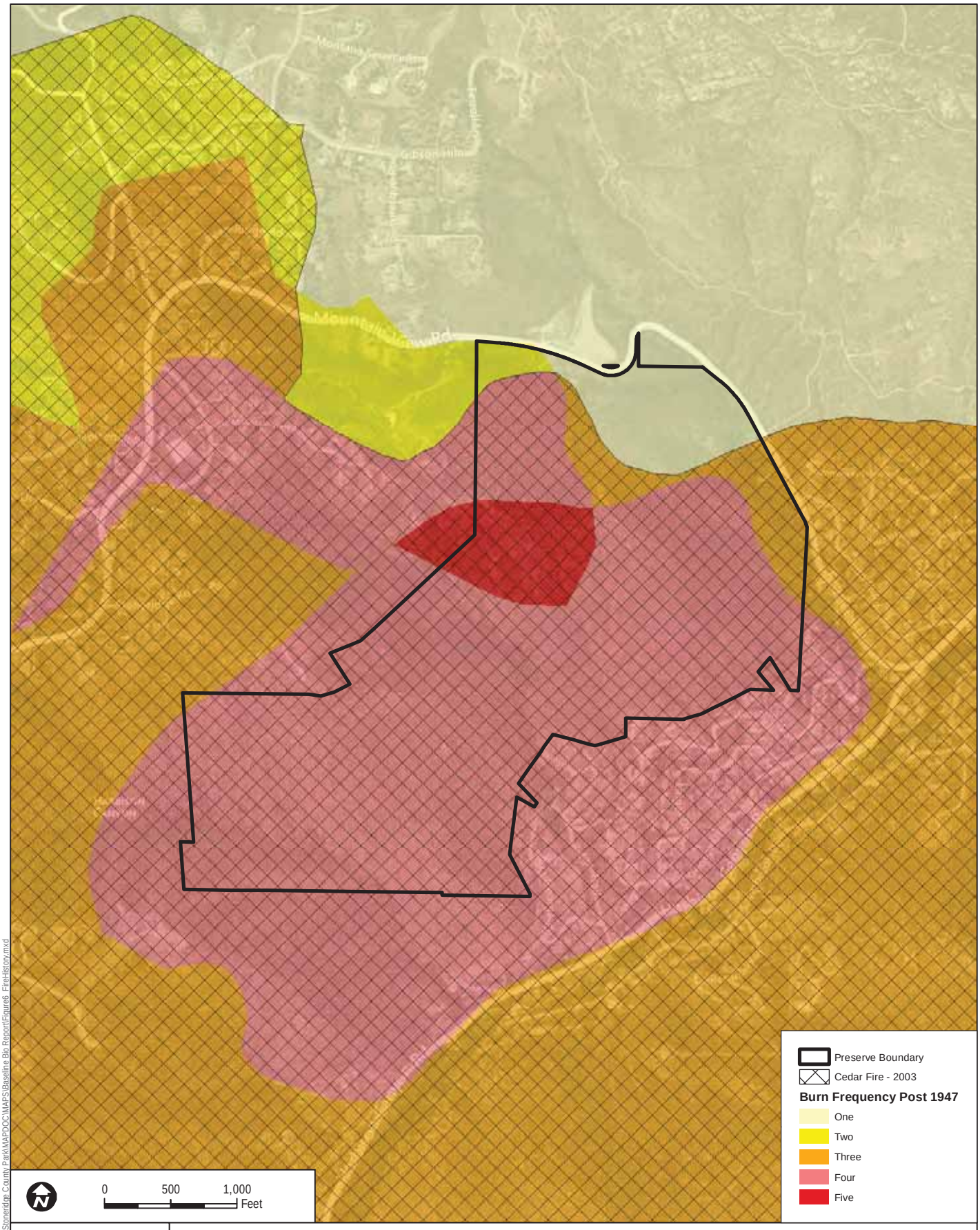
SOURCE: USGS 2012, SanGIS 2012

FIGURE 5

Hydrology Map

Stoneridge Preserve - Baseline Biodiversity Survey

INTENTIONALLY LEFT BLANK



DUDEK

6680-09

SOURCE: Bing, SanGIS 2012

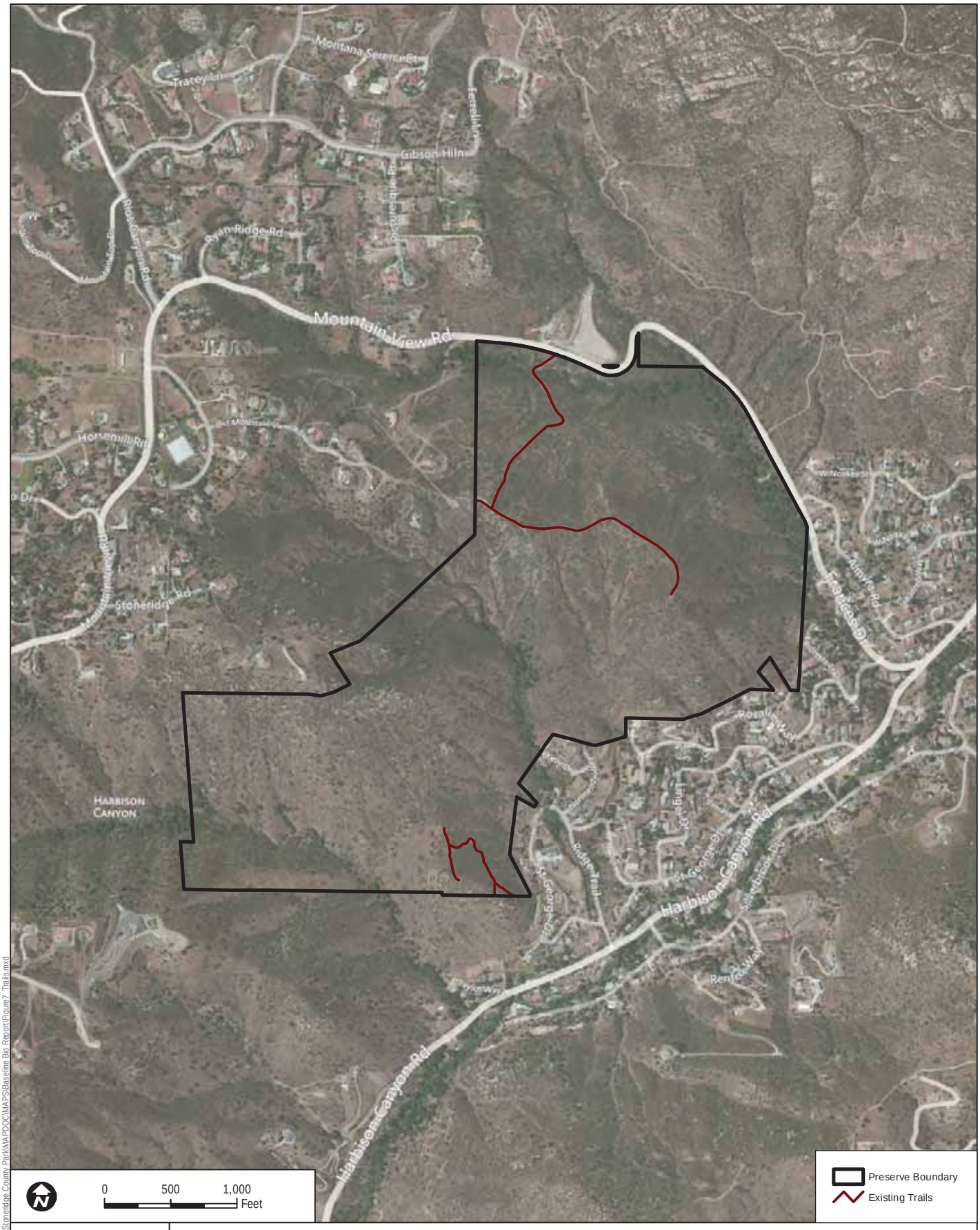
FIGURE 6

Fire History

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680\0.668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure6 FireHistory.mxd

INTENTIONALLY LEFT BLANK



DUDEK

6680-09

SOURCE: Bing

FIGURE 7

Trails Map

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680009\668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure7_Trails.mxd

INTENTIONALLY LEFT BLANK

3.0 METHODS

Dudek biologists conducted biological surveys from April 2012 to September 2012. Table 2, Schedule of Surveys, shows the surveys conducted and the survey conditions. Surveys included vegetation mapping, rare plant surveys, invasive species mapping, butterfly surveys, herpetological pitfall array surveys, herpetological coverboard surveys, diurnal and nocturnal avian point count surveys, small mammal trapping, passive acoustical bat surveys, and medium and large mammal camera surveys.

Table 2
Schedule of Surveys

Date	Time	Personnel	Survey Type	Conditions
4/13/12–4/14/12	NR	PCS	Vegetation mapping, invasive species mapping and rare plant survey	NR
4/20/12	11:30–14:15	PCS	Butterfly survey	0% cc; wind 2–5 mph; 78°F to 84°F
04/26/12	08:36–10:04	EAW, DAM	Avian point count survey (morning survey)	50–90% cc; drizzle; wind 1–5 miles per hour (mph); 61°F to 63°F
04/26/12	22:07–22:58	EAW, DAM	Avian point count survey (evening survey)	90% cc; drizzle; wind 0 mph; 62°F
5/22/12–6/4/12	NR	PCS	Medium and large mammal camera surveys	NR
05/24/12	08:01-09:22	EAW, DAM	Avian point count survey (morning survey)	50–90% cc; wind 0–5 mph; 61°F to 64°F
05/24/12	NR	EAW, DAM	Herpetological coverboard survey	NR
05/24/12	22:13–23:08	EAW, DAM	Avian point count survey (evening survey)	90% cc; wind 0–3 mph; 52°F to 61°F
5/30/12	07:15-16:30	ACT, PCS	Rare plant survey and invasive species mapping	100%–0% cc; wind 0–6 mph; 60°F to 85°F
6/6/12	15:40–17:00	EAW	Herpetological pitfall array survey	0% cc; wind 0–2 mph; 78°F
6/7/12	12:45–13:40	EAW	Herpetological pitfall array survey	0% cc; wind 0–3 mph; 79°F
6/8/12	11:50–13:50	EAW	Herpetological pitfall array survey	0% cc (hazy); wind 2–5 mph; 88°F
06/25/12	08:11–09:36	EAW, DAM	Avian point count survey (morning survey)	0% cc; wind 0–3 mph; 63°F to 68°F
06/25/12	NR	EAW, DAM	Herpetological coverboard survey	NR
06/25/12	22:20–23:20	EAW, DAM	Avian point count survey (evening survey)	0% cc; wind 0 mph; 63°F to 60°F
6/26/12–7/10/12	NR	PCS	Medium and large mammal camera surveys	NR
7/10/12	08:12–09:16	EAW	Herpetological pitfall array survey	60%–50% cc; wind 0–2 mph; 70°F
7/11/12	10:51–12:16	EAW	Herpetological pitfall array survey	20%–45% cc; wind 2–5 mph; 84°F to 88°F

Table 2
Schedule of Surveys

Date	Time	Personnel	Survey Type	Conditions
7/12/12	09:16–10:22	DAM	Herpetological pitfall array survey	100% cc; wind 0 mph; 68°F to 73°F
7/13/12	10:47–11:07	DAM	Herpetological pitfall array survey	70%–60% cc; wind 0–3 mph; 73°F to 78°F
7/13/12–7/20/12	NR	PML	Acoustical bat survey-Anabat location 1 North	NR
7/20/12–7/30/12	NR	PML	Acoustical bat survey-Anabat location 2 South	NR
7/25/12	NR	DAM	Herpetological coverboard survey	NR
7/30/12–8/1/12	NR	TSL	Small mammal trapping (Pass 1)	Clear skies; 60°F to 62°F
7/31/12–8/14/12	NR	PCS	Medium and large mammal camera surveys	NR
8/14/12	09:55–11:15	EAW	Herpetological pitfall array survey	0% cc; wind 0–2 mph; 84°F to 86°F
8/15/12	10:30–11:10	EAW	Herpetological pitfall array survey	60%–40% cc; wind 0–1 mph; 75°F to 80°F
8/16/12	09:25–10:35	DAM	Herpetological pitfall array survey	70%–90% cc; wind 0–3 mph; 74°F to 77°F
8/17/12	11:10–14:00	DAM	Herpetological pitfall array survey	60–90% cc; wind 2–5 mph; 91°F to 95°F
8/20/12–8/22/12	NR	TSL	Small mammal trapping (Pass 2)	Clear skies; 66°F to 69°F
8/21/12	09:00–17:00	ACT	Rare plant survey and invasive species mapping	Clear skies; wind 2–4 mph; 90 to 97°F
8/31/12–9/7/12	NR	PML	Acoustical bat survey-Anabat location 1 North	NR
9/7/12–9/14/12	NR	PML	Acoustical bat surveys-Anabat location 2 South	NR

Personnel Key:
ACT: Andy Thomson
DAM: Danielle Mullen
EAW: Emily Wier
PCS: Patricia Schuyler
PML: Paul Lemons
TSL: Thomas Liddicoat
cc = Cloud Cover
NA = Not Applicable
NR = Not Recorded

A review of state and federal databases for existing biological resource information for the Preserve was conducted to provide baseline information regarding special-status biological resources potentially occurring on the Preserve and in the surrounding area. The following sources were reviewed for pertinent information prior to conducting the baseline biological diversity surveys: the California Natural Diversity Database (CNDDB), information provided by the California Department of Fish and Wildlife (CDFG) (2011a-b, 2012a-c), and the California Native Plant Society's (CNPS's) *Inventory of Rare and Endangered Vascular Plants* (CNPS 2012).

Survey Limitations

Biological surveys within the Preserve were conducted from April to September 2012. As such, many wildlife species, including migratory birds, which occur in the area during fall and winter seasons, were not captured during this analysis. Additional surveys may be desired at a later date to establish a more thorough inventory of wildlife species. Focused plant surveys were conducted in April, May, and August to correspond with the blooming periods of the special-status species with the highest potential to occur within the Preserve. Not all plant species would have bloomed during these three survey passes, and it is possible that detection of some special-status plant species may not have possible due to the timing of the focused plant surveys and variable seasonal conditions (e.g., rainfall and temperatures) that influence growth and flowering.

Coverboard sampling is widely recognized as an effective survey technique for reptiles and amphibians, especially during winter months when cold-blooded animals actively seek out shelter (Nussbaum et al. 1983). Since the surveys for the Preserve occurred during summer months, the species diversity obtained during surveys was much lower than would be anticipated during winter months.

3.1 Vegetation Communities/Habitat

3.1.1 Vegetation Communities Mapping

Vegetation communities and land cover types were mapped in the field directly onto 200-scale (1 inch = 200 feet) base maps of the Preserve using 1-foot resolution color aerial imagery from 2012 (Bing 2012). Mapping of the Preserve included a 100-foot buffer pursuant to County of San Diego guidelines (County of San Diego 2010a). Vegetation surveys were conducted throughout the Preserve, both on foot and using vehicles where access was available. Vegetation community classification was based on two separate systems, including the Holland (1986) (as modified by Oberbauer 2008) classification system and the Vegetation Classification Manual (VCM) for Western San Diego County (San Diego Association of Governments; SANDAG 2011). The field mapping was conducted according to the VCM and then cross-walked to the Holland/Oberbauer classification system. Following the completion of fieldwork, vegetation polygons were scanned and digitized using ArcGIS, and a GIS coverage was created. Acreage calculations of vegetation communities and land cover types were determined using ArcGIS. Vegetation community classifications used in this report follow the VCM.

3.2 Plants

All plant species encountered during the field surveys were identified and recorded. Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2012), and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2012). A list of plant species observed in the Preserve is provided in Appendix A.

3.2.1 Floristic Surveys

Special-Status/Rare Plant Surveys

Special-status biological resources present or potentially present in the Preserve were identified through a literature search using the following sources: CNDDB (CDFG 2012b-c) and the *Inventory of Rare and Endangered Vascular Plants* (CNPS 2012). Special-status plant species considered in this report are those (a) listed by federal and/or state agencies, proposed for listing as threatened or endangered, or are candidate species; (b) assigned a California Rare Plant Rank (CRPR) (formerly known as the CNPS List); (c) listed on the County of San Diego rare species list (County of San Diego 2009a); or (d) covered under the MSCP (City of San Diego 1998).

Dudek conducted three surveys to maximize detection of special-status plants within the Preserve. Based on usual blooming patterns, the first pass was conducted in April 2012 to detect early-blooming spring annual species. The second pass was conducted in May 2012, which corresponded with the blooming periods of the majority of the potentially occurring special-status plant species. A third survey pass was conducted in August 2012 to detect summer-blooming species. Surveyors were prepared with a target list of species that had potential to occur within the Preserve.

Field survey methods conformed to County of San Diego Department of Planning and Development Services (PDS) Biological Survey Guidelines (County of San Diego 2010a); CNPS Botanical Survey Guidelines (CNPS 2001); Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 2000); and Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 1996). All plant species encountered during the field surveys were identified to subspecies or variety, if applicable, to determine sensitivity status.

The potential for special-status plant species to occur within the Preserve was evaluated based on the elevation, soils, vegetation communities, and level of disturbance of the Preserve, as well as species status and distribution in the vicinity of the Preserve and the results of rare plant surveys.

Non-native Invasive Plant Species Mapping

Locations of non-native invasive plant species were mapped within the Preserve. The entire Preserve was surveyed; however, to maximize productivity, locations that were identified as disturbed in the vegetation mapping or areas that are expected to have experienced disturbance in the past due to their proximity to development or other sources of disturbance were prioritized. The focus was on mapping species with the greatest potential to invade native habitats, such as those listed on the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory (2012) with a rating of moderate or high (e.g., bull thistle [*Cirsium vulgare*], tree tobacco [*Nicotiana glauca*], etc.), or species that may not be rated as moderate or high, but are considered to have a localized potential for habitat invasion (e.g., rose Natal grass [*Melinis repens* ssp. *repens*]). Ubiquitous species scattered across the Preserve that pose limited potential for invasion into established habitats and that would be impractical to control on an individual basis (e.g., brome grasses [*Brachypodium* spp.] or mustards [*Brassicaceae* spp.]) were not mapped as individual occurrences; however, their presence was noted as components of non-native grasslands mapped on the Preserve.

Species locations were mapped with a combination of field Global Positioning System (GPS) and hand mapping on field maps. All collected data were combined into a GIS data layer with points and polygons representing species locations.

3.3 Wildlife

All wildlife species detected during the field surveys by sight, vocalizations, burrows, tracks, scat, and other signs were recorded. Binoculars (10mm×40mm) were used to aid in the identification of observed wildlife. A cumulative list of wildlife species observed by Dudek during the 2012 surveys is presented in Appendix B. Latin and common names of animals follow Crother (2008) for reptiles and amphibians, American Ornithologists' Union (AOU) (2012) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA) (2001) for butterflies.

The potential for special-status wildlife species to occur on the Preserve were evaluated based on the elevation, vegetation communities, level of disturbance, status and distribution in the vicinity, and the results of wildlife surveys conducted on the Preserve.

3.3.1 Invertebrates

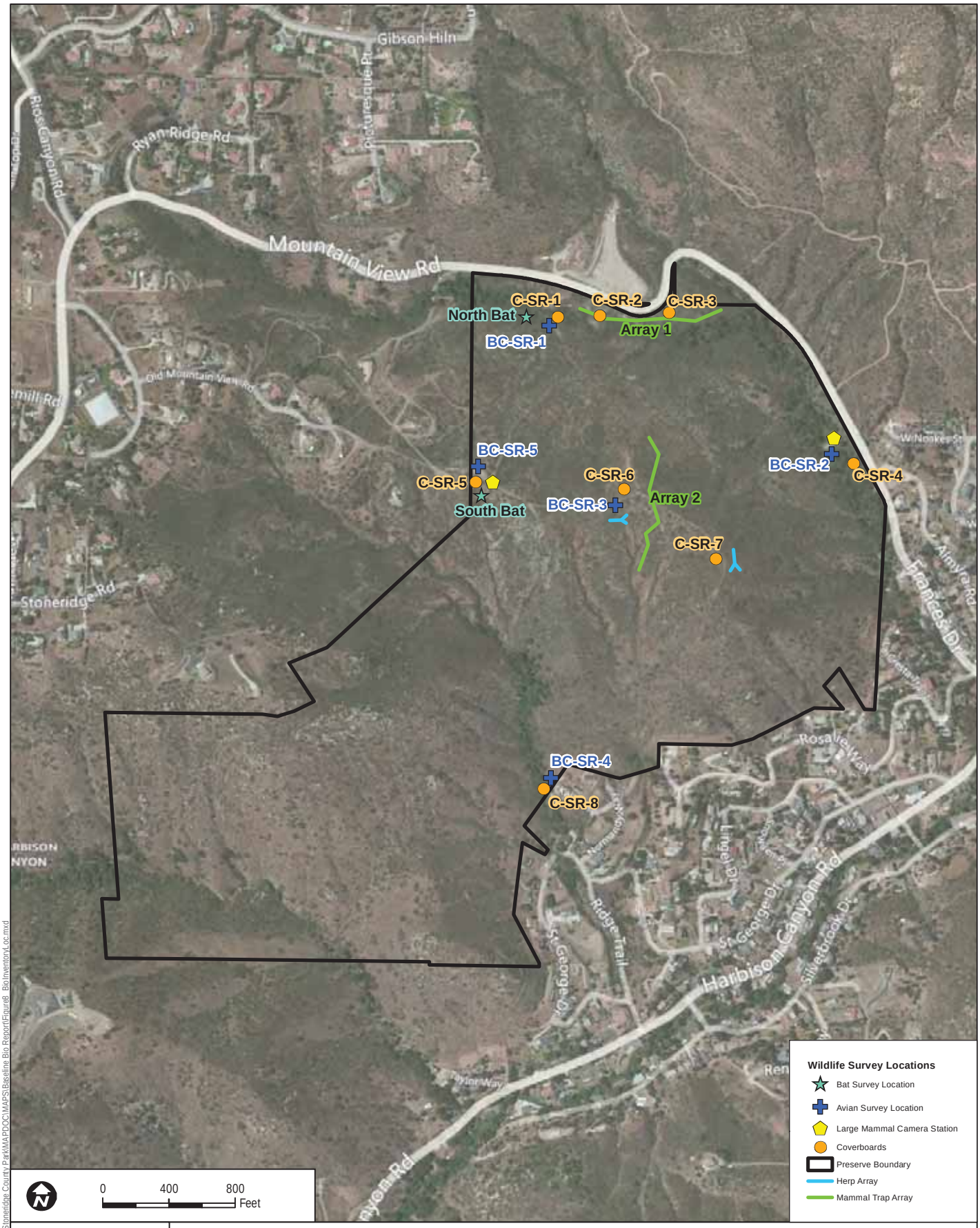
One general butterfly survey was performed in the Preserve in 2012 at the approximate peak of the early spring butterfly activity period to record anecdotal butterfly species observations during the early months of the year. While it was not possible to hit the absolute peak, the survey was conducted in April 2012 (Table 2). The vegetation map, soils, and previous experience with various special-status butterfly species were used to determine areas that may be suitable for common and special-status butterfly species. Host or nectar plants for certain special-status butterflies (e.g., Quino checkerspot or Hermes copper), if observed, were mapped as either a point or polygon location, depending on the size of the population. Areas containing nectar or host plant resources, drainages, ridges, and hilltops were emphasized during butterfly surveys. It should be noted that the survey for butterflies was conducted from morning through the afternoon period when it was assumed that more butterflies would be visible and conditions were suitable for butterfly activity. Incidental butterfly observations were also recorded during wildlife surveys and representative photographs were taken of the butterflies observed, if possible.

3.3.2 Herpetofauna

Two methods of surveying for herpetofauna were utilized during surveys of the Preserve. Both approaches were utilized in order to sample species diversity and abundance, as different trapping methods are utilized for different target species. Coverboard surveys were utilized to survey for slower moving or burrowing herpetofauna, whereas pitfall trap arrays were targeted towards faster moving and more active herpetofauna.

A total of eight coverboard surveys, consisting of 3-foot by 3-foot plywood planks painted brown, were placed in suitable herpetofauna habitats throughout the Preserve (Figure 8). Coverboards were placed in such a way that a representative array of habitat types were surveyed. Leaf litter or dirt was carefully placed over the coverboard between survey periods. Coverboards were checked for herpetofauna by carefully lifting up the coverboard and looking for animals and/or signs of their presence and utilizing a stick or rake to carefully comb through soil and leaf litter for other animals. Coverboards were checked for herpetofauna three times during the survey season, during the months of May, June, and July 2012 (Table 2).

The second methodology utilized was pitfall trap arrays. Two pitfall trap arrays were constructed on the Preserve (Figure 8). An attempt was made to install the arrays at locations that provided the greatest amount of potential species diversity.



DUDEK

6680-09

SOURCE: Bing

FIGURE 8

Biological Inventory Locations

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680006\668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure8_BioInventoryLoc.mxd

INTENTIONALLY LEFT BLANK

The arrays were constructed in accordance with the USGS document "Herpetological Monitoring Using a Pitfall Trapping Design in Southern California" (USGS 2008) and were modified to include snake traps along each arm of the arrays. Specifically, the arrays consisted of three 15-meter (49-foot) arms of drift fence. Each arm radiated from a central pitfall bucket at approximately 120° increments. Additional pitfall buckets were placed in the center and terminal ends of the array arms. Snake traps (i.e., wire mesh rectangular traps with one-way doors or cylindrical traps with funnels at each end) were installed between the middle and terminal pitfall buckets on the right side of each the arm. Drift fencing was keyed into the ground to prevent reptiles and snakes from crawling under it. In addition, an effort was made to minimize the number of creases that would provide reptile refuge between buckets. Typical 5-gallon buckets were used as pitfall traps. The edges of the buckets were flush with, or slightly below, the ground surface. Bucket lids were fitted with angled wood blocks on their top surfaces, providing an approximately 2-inch gap between the ground surface and the lid to encourage reptiles to crawl under while seeking cover. The lids fit the buckets securely and were protected from deterioration so that the buckets could be sealed off from captures when not in use.

Traps were opened on the first day, checked over the next four days, and closed after the fourth trap check. The arrays set on the Preserve were checked concurrently with other arrays that had been set up within three other County properties (the Sycamore South and Hagey properties and Potrero/Mason property). It should be noted that in June, the Preserve arrays were only open for three days. Due to a delay in initial approval for construction of the arrays within the Preserve, traps were opened on the second day of surveys for all three properties. It was decided by Dudek that the Preserve arrays would not be checked on the fourth day, which would have required a separate site visit.

The arrays were checked, all animals were processed, and all animals were released before daytime temperatures reached levels that could result in animal mortality. All captures were identified and sexed. Data was collected regarding the weight, snout-vent length, total length, sex, and age class of each individual. Finally, each individual was marked with permanent marker near the back of the neck to determine if it was a recapture during that session. No scale or toe clipping or any other means of permanent marking was performed during this study. After each animal was processed, it was released at a nearby location near shrubs, burrows, or debris (care was taken to ensure that competitors or potential predator/prey species were not released at the same location). Animals that ran from the release site directly into another pitfall trap or snake trap were released without being counted again.

Captured small mammals were weighed, identified, photographed, and sexed. Each animal's body length, total length, and ear length were also measured. They were immediately released after processing.

The diversity of large invertebrates (e.g., tarantulas, scorpions, Jerusalem crickets [*Stenopelmatus fuscus*], etc.) was counted and identified as feasible.

Trap arrays were sampled during three periods within the summer months of June, July, and August 2012 (Table 2). Representative photographs were taken of the arrays and animals that were captured.

3.3.3 Birds

Using point counts to track species' presence over time is a standard practice and has been implemented over the long term by different entities, including the Audubon Christmas Bird Count, Point Reyes National Seashore, Partners in Flight, Arizona State University, Florida Monitoring Project, U.S. National Park Service, California Department of Parks and Recreation, USGS, USFWS, and others.

Much variation exists among the various point count studies relating to detection radius, distance between stations, season, and amount of time spent at each station. Because the habitats and topographies present within the Preserve are diverse, a radius of 50 meters (164 feet) was used around each point. This falls well within ranges found within the literature (20 to 400 meters; 66 to 1,312 feet) and allowed greater confidence of detection than larger radius designs.

Point Count Locations

Point count locations were established in such a way that they covered as many different portions of the Preserve as possible given the access constraints. In addition, these point locations were distributed to cover more of the parcels. No avian point count location was situated closer than 700 feet from another point. A total of five point count stations were established within the Preserve (Figure 8). The survey sites were located in chamise chaparral–mission manzanita alliance, coast live oak woodland, and chamise chaparral–coastal sage scrub association. The center point for each station was permanently established in the field by mapping the GPS coordinates and installing a 2-foot section of steel rebar in the soil so that the top 2 inches were visible, flagged, and painted. All rebar and flagging were removed at the end of the final survey. Each station was photographed in the four cardinal compass directions (Appendix C).

Conducting the Point Count Surveys

A vehicle being driven to the avian point count location traveled no faster than 5 miles per hour within 500 feet of any station. Upon entering the point count station, the observer stopped the vehicle and turned off the engine. The observer waited for three minutes before beginning the sampling period. During the waiting period, the observer filled out the weather conditions

portion of the data sheet. After the three-minute waiting period, the observer noted the time on the data sheet and started the counting session. After 10 minutes, the observer stopped the counting session, packed up equipment, and continued to the next station. Stations were counted in the same order each time, starting at approximately the same time relative to sunrise so that future data sets could be compared.

When starting the survey, the observer identified and tallied all birds that were observed (audibly or visually) within the 50-meter (164-foot) survey area. An attempt was made to count birds only once (i.e., minimize counting the same individual more than once) during the time period. Groups of birds (e.g., quail, family groups) were identified and the number of individuals noted. Birds detected outside the 50-meter area were noted in a separate column. Birds noted only in flight were additionally recorded as either using the landscape (e.g., actively foraging swallows and raptors and raptors using thermal updrafts) or not (e.g., birds commuting between distant habitat patches off-site, such as cormorants over an upland site, or birds migrating high overhead). When multiple sightings of a species occurred within a point count area, multiple entries for a species were only included if the observer was reasonably certain that they were different individuals. Only different individuals of a given species were counted. All recorded species in the data sheets are assumed to be separate individuals (e.g., 10 California towhee [*Melozone crissalis*] means that 10 different California towhee were detected). Estimates for large flocks of birds (e.g., blackbirds [*Icteridae* spp.], European starlings [*Sturnus vulgaris*], etc.) were provided and noted as being estimates in the Notes section of the data sheet. No differentiation between adult and juvenile birds was made during this study. Unidentified birds were noted to the closest taxonomic group, and notes describing the species were included within the Notes section of the data sheet.

The observer was as unobtrusive as possible during the point count session. The observer wore drab clothing, did not talk, turned cell phone to "vibrate," and did not try to elicit bird responses by "pishing," using recorded calls, or any other means.

Nocturnal surveys proceeded in the same manner as the diurnal surveys. A moderately powered flashlight was used to aid identifications.

Once the point count session was finished, all data sheets were gathered, and data were entered into Excel or Access data files for future analysis.

All point count locations were surveyed during the same 24-hour period. Diurnal surveys occurred between 08:00 and 10:00 hours, and nocturnal surveys took place between 22:00 and 23:20 hours. Surveys took place in April, May, and June 2012 (Table 2). Only one day was required per month to cover these areas. Survey timing allowed the detection of both breeding and migratory bird species.

To augment the point count studies, birds identified during the course of other survey work were also included in the species compendium (Appendix B), although their relative abundance was not noted.

3.3.4 Mammals

Small Mammals

Two small mammal trapping arrays were set within the Preserve (Figure 8). Trapping took place over two rounds, with the first round occurring in July 2012 and the second occurring in August 2012 (Table 2). Each trapping round involved setting two trap arrays (i.e., Array-1 and Array-2) for three consecutive nights; no daytime trapping occurred. The trapping effort was conducted when the weather had been relatively dry for at least five days prior to trapping.

Each trap array set included two meandering parallel lines (i.e., trap lines A and B) of Sherman live-traps set at approximately 10-meter (32-foot) intervals. Traps were sign-set (e.g., set at burrow entrances, runs, woodrat [*Neotoma* spp.] nests, rock outcrops) to the extent feasible in order to capture the greatest diversity possible. In each trap array, the trap lines were set parallel, approximately 7 meters (23 feet) apart. Each trap line consisted of 20 traps, for a total of 40 traps per array set per night, covering approximately 200 meters (656 feet) of distance. Meandering trap lines were set to sample the widest area possible for species and to obtain greater species diversity information. Traps were set in locations that provided the greatest chance for diversified data collection (e.g., interface between community types, areas of microhabitat changes, etc.). The location of each trap was recorded using a GPS unit and marked in the field using whisker nails and flagging tape.

Trap arrays were set and baited with Quaker Oats each evening before dusk and were checked the following morning near dawn before daytime temperatures reached levels that could result in animal mortality. All captured animals were processed (i.e., data collected regarding the weight, ear length, hind foot length, sex, age class, and sexual maturity of the individual), identified to species, and marked with a semi-permanent marker on their abdominal fur to determine if it was recaptured. No ear notching, toe clipping, fur cutting, microchipping, or any other means of permanent marking was performed during this trapping study. After the captured animal was processed, it was carefully released at the capture location. All traps that did not capture an animal and remained set (i.e., not sprung/closed) during the morning checks were sprung/closed so that no additional animals could be captured during the day. Representative photographs were taken of the trap arrays. Photos were taken of all captured mammals and reviewed by Dudek senior biologist Phil Behrends.

In addition to the species captured during the trapping, small mammal species identified through other surveys (e.g., pitfall arrays and nocturnal surveys) were included in the species compendium (Appendix B).

Bats

Anabat technologies were used to identify foraging and roosting bats present within the Preserve. Prior to conducting bat habitat assessment and acoustical surveys, a review of the literature of bats in California was conducted to identify species with potential to occur in the survey area. All areas identified as having high potential for bat roosting and foraging that allowed for vehicular access were surveyed using the Anabat bioacoustics survey system.

Passive acoustic recording of bat calls was conducted at two monitoring locations within the Preserve (Figure 8). The Anabat locations were selected by Dudek biologist Brock Ortega in consultation with the County. Dudek biologist Paul Lemons conducted a site reconnaissance survey to further refine the monitoring locations where it was presumed that bat activity would be highest based on localized topography and presence of drainages. Following the reconnaissance survey, the Anabat microphone was attached to a pole, which was then hung from a tree at each location. Locations were chosen at different habitats as feasible and were set at least 305 meters (1,000 feet) apart. The Anabat units were deployed and run continuously for approximately 1 week at each location. Two survey passes were conducted during both July and September 2012 (Table 3).

Table 3
Schedule of Passive Acoustic Monitoring

Location	Dates of Deployment	Total No. Detector Nights
1-North	7/13/12–7/20/12; 8/31/12–9/7/12	7 7
2-South	7/20/12–7/30/12; 9/7/12–9/14/12	10 7

After completion of these surveys, identification of species used the methods of O'Farrell et al. (1999) based on frequency characteristics, call shape, and comparison with a comprehensive library of vocal signatures developed by O'Farrell and colleagues. Thus, species richness (i.e., number of species verified as present) was obtained for each survey location. An index of abundance (IA), or the magnitude of each species' contribution to spatial use, was obtained using the sum of one-minute time increments for which a species was detected as present, divided by the number of nights of sampling (Miller 2001). Species were identified by O'Farrell Biological Consulting LLC for Dudek.

Representative photographs were taken of the bat survey locations (Appendix F).

Medium to Large Mammals

Two baited motion-sensing cameras were installed within the Preserve (Figure 8). One camera was placed along the main trail that runs through the Preserve and the second camera was placed within the coast live oak woodland habitat adjacent to Mountain View Road. Both areas function as wildlife corridors. Each camera was set where it was accessible and protected from the public, but placed near potential higher-use movement areas (e.g., dirt roads leading to important resources, such as canyons or creeks). The ground in front of the camera was baited with a scent lure, such as Gusto, and each camera was set so that the bait station and travel path were covered. Cameras were set in place for two weeks per month, and photographs were downloaded, the bait refreshed, and batteries checked at approximately one-week intervals. Camera stations were installed and run in June, July, and August 2012 (Table 2).

Following the camera study, all photographs were reviewed by at least two Dudek biologists to determine species and number present. All data, including time and date of photograph, species captured, and moon phase, were cataloged on an excel spreadsheet. Example photographs of species captured are included in Appendix F.

4.0 RESULTS AND DISCUSSION

4.1 Vegetation Communities/Habitat

Vegetation and land cover communities present within the Preserve were mapped based on the VCM and cross-walked to the Holland/Oberbauer classification system. There are seven plant alliances, associations, or semi-natural stands present within the Preserve (Table 4). Figure 9a shows the VCM code distribution of vegetation communities and land covers within the Preserve; Figure 9b shows the Holland/Oberbauer code distribution. Descriptions of the vegetation community follow the VCM code. The VCM does not include unvegetated habitat (e.g., disturbed land or urban/developed areas); therefore, unvegetated habitat was described using the Holland/Oberbauer code distribution.

Table 4
Vegetation Communities and Land Covers

VCM code	VCM Alliance/ Association	VCM Common Name	Holland Code	Holland Classification	Acres on Site[1]
Riparian Forests and Woodlands					
3.6	*Quercus agrifolia* Alliance	Coast Live Oak Woodland Alliance	71160	Coast Live Oak Woodland	15.98
				Riparian Forests and Woodlands Total	15.98
Drought-Deciduous Shrublands					
4.1.2	*Adenostoma fasciculatum–(Eriogonum fasciculatum Artemisia californica, Salvia mellifera)* Association	Chamise Chaparral–Coastal Sage Scrub Association	37G00	Coastal Sage-Chaparral Transition	46.51
4.2	*Adenostoma fasciculatum–Xylococcus bicolor* Alliance	Chamise Chaparral–Mission Manzanita Alliance	37120	Southern Mixed Chaparral	23.40
4.7.1	*Artemisia californica–Eriogonum fasciculatum–Malosma laurina* Association	California Sagebrush–California Buckwheat–Laurel Sumac Association	32500	Diegan Coastal Sage Scrub	50.81
4.13.1	*Bahiopsis laciniata–Artemisia californica–Eriogonum fasciculatum* Association	San Diego Sunflower–California Sagebrush–California Buckwheat Association	32500	Diegan Coastal Sage Scrub	89.47
4.18.1	*Ceanothus tomentosus* Association	Woollyleaf Ceanothus Association	37120	Southern Mixed Chaparral	17.04
				Drought-Deciduous Shrublands Total	227.23
Upland Herbaceous Vegetation					
5.8	*Bromus (diandrus, hordeaceus)–Brachypodium distachyon* Semi-Natural Stand	Annual Brome Grasslands Semi-Natural Stands	42200	Non-Native Grassland	0.04
				Upland Herbaceous Vegetation Total	0.04
Unvegetated					
N/A	*N/A*	N/A	11300	Disturbed Habitat	3.12
N/A	*N/A*	N/A	12000	Urban/Developed	0.35
				Unvegetated Total	3.47
				Grand Total	246.72

[1] Does not include 100-foot buffer acreage

The following vegetation community and land cover descriptions for the Preserve follow the VCM codes.

Coast Live Oak Woodland Alliance (3.6)

Coast Live Oak Woodland Alliance is dominated by a single evergreen species: coastal live oak (*Quercus agrifolia var. oxyadenia*). Canopy height reaches 10 to 25 meters (30 to 82 feet). The shrub layer is poorly developed, but may include toyon (*Heteromeles arbutifolia*), gooseberry (*Ribes* spp.), laurel sumac (*Malosma laurina*), or blue elderberry (*Sambucus nigra* ssp. *caerulea*) (SANDAG 2011). The herbaceous component is continuous, dominated by a variety of introduced species (SANDAG 2011).

There are 15.98 acres of Coast Live Oak Woodland Alliance mapped within the Preserve. This habitat community is mapped along drainages following the northeastern border, centrally, and in the southwestern portion of the Preserve. Under the Holland classification, this alliance is considered Coast Live Oak Woodland, an MSCP Tier I vegetation community.

Chamise Chaparral – Coastal Sage Scrub Association (4.1.2)

The Chamise Chaparral– Coastal Sage Scrub Association is widespread throughout California, and is dominated by chamise in the shrub canopy, along with other shrubs occurring as subdominants to form a continuous canopy cover (SANDAG 2011). Subdominants include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), as well as native or non-native grass species. This is a mature and stable shrub community.

The Chamise Chaparral– Coastal Sage Scrub Association is mapped on 46.51 acres within the Preserve, and is found on steep slopes. Under the Holland classification, this association is considered coastal sage – chaparral transition, and is an MSCP Tier II vegetation community.

Chamise Chaparral–Mission Manzanita Alliance (4.2)

The Chamise Chaparral–Mission Manzanita Alliance is found along the south coast of California on primarily mesic slopes from the coast inland (SANDAG 2011). Chamise and mission manzanita (*Xylococcus bicolor*) are codominants with subdominant shrubs including ceanothus (*Ceanothus* sp.), chaparral yucca (*Hesperoyucca whipplei*), scrub oak (*Quercus berberidifolia*), and sages (*Salvia* spp.). The herbaceous layer in this alliance is sparse or intermittent (SANDAG 2011). This alliance is mapped on 23.4 acres within the central region of the Preserve. Under the Holland classification, Chamise Chaparral–Mission Manzanita Alliance is considered coastal sage–chaparral transition, an MSCP Tier IIIA vegetation community.

California Sagebrush–California Buckwheat–Laurel Sumac Association (4.7.1)

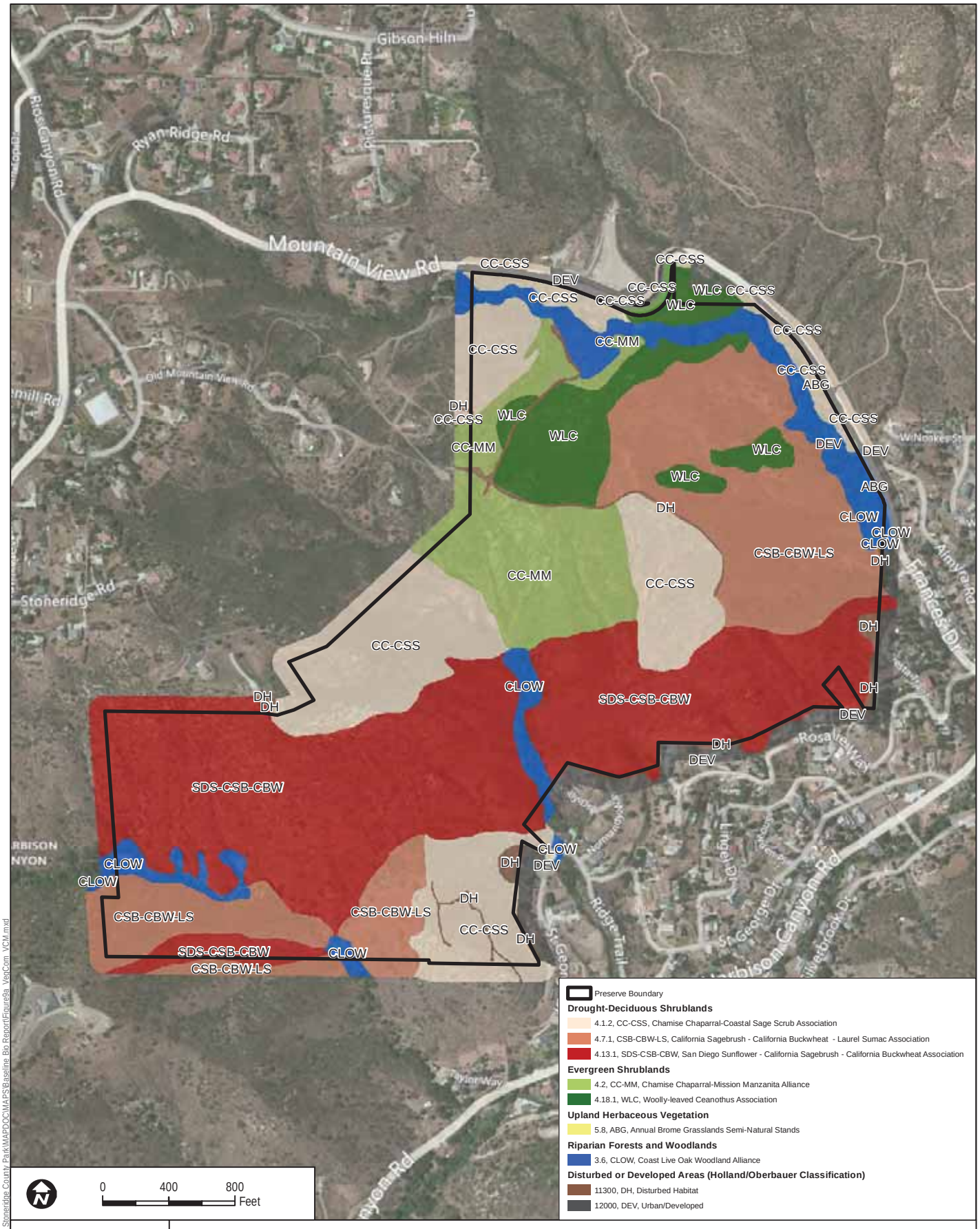
California sagebrush, California buckwheat, and laurel sumac are all codominant in an open shrub canopy of this association (SANDAG 2011). Other species commonly found in this association include lemonadeberry (*Rhus integrifolia*), California brittlebrush (*Encelia californica*), chaparral yucca, and spiny redberry (*Rhamnus crocea*). There is an open herbaceous layer characterized by high diversity. This association is frequently a transitional stage resulting after fire or other disturbance (SANDAG 2011). This association is one of the dominant habitat communities found within the Preserve and comprises a total of 50.81 acres. Under the Holland Classification, California Sagebrush–California Buckwheat–Laurel Sumac Association is considered Diegan coastal sage scrub, an MSCP Tier II vegetation community.

San Diego Sunflower–California Sagebrush–California Buckwheat Association (4.13.1)

San Diego Sunflower, California sagebrush, and California buckwheat are all codominant in this open shrub canopy association (SANDAG 2011). Other species commonly found in this association include lemonadeberry, California brittlebush, chaparral yucca, and spiny redberry. There is an open herbaceous layer characterized by high diversity. This association is frequently a transitional stage due to fire or other disturbance (SANDAG 2011). This association is a dominant habitat community found within the Preserve and comprises a total of 89.47 acres. The San Diego Sunflower–California Sagebrush–California Buckwheat Association is considered Diegan coastal sage scrub under the Holland classification, an MSCP Tier II vegetation community.

Woollyleaf Ceanothus Association (4.18.1)

Woollyleaf Ceanothus Association is found on coastal foothills in Southern California (SANDAG 2011). This association has a continuous to intermittent shrub canopy, and the herbaceous layer is sparse in mature stands. Woolyleaf ceanothus (*Ceanothus tomentosus*) comprises at least 30% of the relative cover in the shrub canopy. Subdominant shrubs include oaks (*Quercus* spp.), mountain-mahogany (*Cercocarpus* spp.), ceanothus, and heartleaf keckiella (*Keckiella cordiflora*) (SANDAG 2011). There are 17.04 acres of this association within the northern portion of the Preserve. Under the Holland classification, Woollyleaf Ceanothus Association is considered southern mixed chaparral, an MSCP Tier IIIA vegetation community.



DUDEK

6680-09

SOURCE: Bing

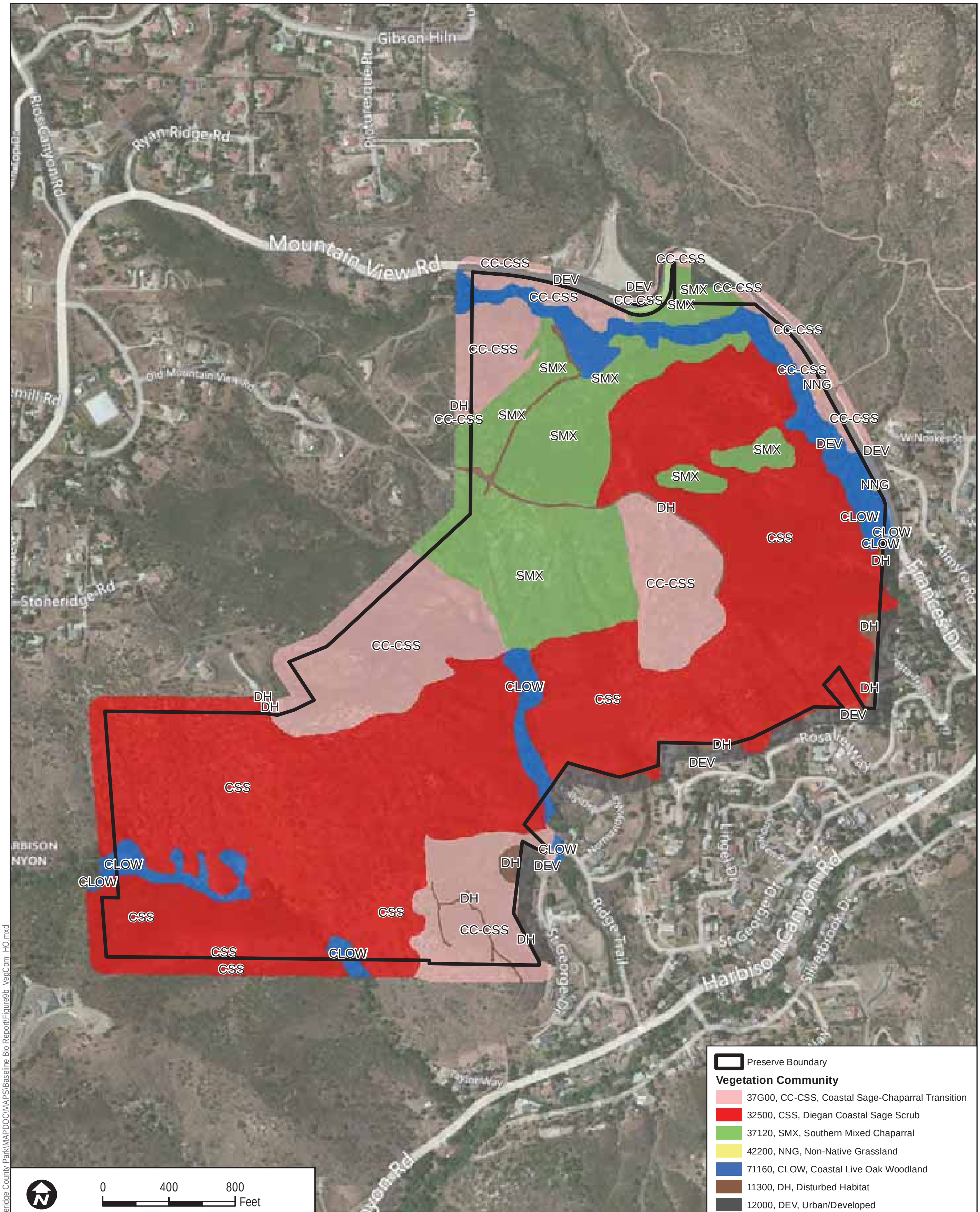
FIGURE 9a

Vegetation Communities and Land Cover Types (VCM)

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680010\6680109 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure9a_VegCom_VCM.mxd

INTENTIONALLY LEFT BLANK



DUDEK

6680-09

SOURCE: Bing

FIGURE 9b

Vegetation Communities and Land Cover Types (Holland)

Stoneridge Preserve - Baseline Biodiversity Survey

INTENTIONALLY LEFT BLANK

Annual Brome Grasslands Semi-Natural Stands (5.8)

Annual Brome Grasslands Semi-natural Stands is characterized by a dense to sparse cover of annual grasses, particularly bromes (*Bromus diandrus, B. hordaceus, B. madritensis*), which are dominant or codominant in the herbaceous layer. There may be trees or shrubs present, although they are sparse (SANDAG 2011). This vegetation community frequently results from changes in natural ecosystem processes, which can be caused by maintenance (e.g., mowing, scraping, disking, spraying), grazing, repetitive fire, agriculture, or other mechanical disruption that has altered soils and removed native seed sources from areas formerly supporting native vegetation (SANDAG 2011). Annual brome grasslands typically occur adjacent to roads or other developed areas where there has been some historic disturbance (SANDAG 2011). This habitat may support special-status plant and animal species and provide a valuable foraging habitat for raptors.

One polygon of Annual Brome Grasslands Semi-natural Stands, consisting of 0.04 acre, was mapped in the northeastern corner of the Preserve. Under the Holland Classification, Annual Brome Grasslands Semi-natural Stands is considered non-native grasslands, an MSCP Tier IIIB vegetation community.

Disturbed Habitat (Holland 11300)

Disturbed habitat is not described by the VCM, but is described by Oberbauer et al. (2008). Disturbed habitat refers to areas that are not developed, yet lack native vegetation, and generally are the result of severe or repeated mechanical perturbation. Oberbauer et al. (2008) provides the following examples of disturbed land: "areas that have been graded, repeatedly cleared for fuel management purposes, and/or experienced repeated use that prevents natural revegetation, such as dirt parking lots and well-established trails, recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old home sites." Vegetation, if present, is nearly exclusively composed of non-native plant species, such as ornamentals or ruderal exotic forbs, such as thistles (*Centaurea* spp., *Carduus* spp., *Cynara* spp., *Sonchus* spp., *Salsola tragus*), horehound (*Marrubium vulgare*), London rocket (*Sisymbrium irio*), wild radish (*Raphanus* spp.), fig-marigold (*Carpobrotus edulis*), chrysanthemum (*Chrysanthemum* spp.), and fennel (*Foeniculum vulgare*). Although some grass species may be present in disturbed land, most annual grass species are more typical of non-native grassland and do not dominate vegetative cover in disturbed land (Oberbauer et al. 2008).

There are 3.12 acres of disturbed land within the Preserve. The disturbed land consists primarily of dirt trails or cleared areas around existing homes. Disturbed habitat is an MSCP Tier IV vegetation community, indicating that it has limited habitat value.

Urban/Developed Land (Holland 12000)

Land designated as urban/developed is not addressed by the VCM; therefore, this description follows Oberbauer et al. (2008). Developed land is generally subject to significant human disturbance associated with development. There are 0.35 acres of developed land in the Preserve. The developed land is composed of encroachments from adjacent residences. Developed land is an MSCP Tier IV vegetation community, indicating that it has limited habitat value.

4.2 Plants

A total of 162 vascular plant species were observed or detected within the Preserve during the 2012 baseline surveys. There are 133 native plant species and 29 non-native plant species within the Preserve. Appendix A lists all of the plant species observed.

4.2.1 Special-Status Plant Species Observed

The following section discusses special-status plant species observed within the Preserve. A special-status plant species is listed by federal or state agencies as threatened or endangered; considered to be of special status by one or more special interest groups, such as the CNPS (e.g., CRPR 1, 2, 3, and 4 Plant Species); or is included on the County of San Diego Sensitive Plant List (Group A, B, C, or D Listed Plants).

Four special-status plant species were identified within the Preserve: Engelmann oak (*Quercus engelmannii*), rush-like bristleweed (*Xanthisma junceum*), San Diego County viguiera (*Bahiopsis* [=*Viguiera*] *laciniata*), and San Diego sagewort (*Artemisia palmeri*).

Engelmann oak (*Quercus engelmannii*)

CRPR 4.2, County List D

Engelmann oak is a perennial deciduous tree typically found in oak woodlands or southern mixed chaparral vegetation communities in areas of elevation from 50 to 1,300 meters (164 to 4,265 feet) (CNPS 2012, Reiser 1994). Large Engelmann oaks occur as trees generally in open savannah grasslands; in the foothills, this oak will occur as a shrub within chaparral habitats (Reiser 1994).

Reiser (1994) states that Engelmann oaks in Southern California are relatively abundant and stable, although successful reproduction is compromised by cattle overgrazing and herbivory by small mammals or deer. Additionally, this species requires specific weather conditions for seedling establishment. Hybridization with other species of scrub oak (e.g., *Quercus dumosa*) is common.

Within the Preserve, Engelmann oak is mapped throughout the eastern and central riparian corridors (Figure 10). This species occurs as a large shrub where it occurs in shrub communities and as a tree on the periphery of riparian corridors within the Preserve. One individual is mapped within the southern riparian corridor. A total of 18 individuals are mapped within the Preserve.

Rush-like bristleweed (*Xanthisma junceum*)

CRPR 4.3, County List D

Rush-like bristleweed is a perennial herb typically located in xeric chaparral or coastal scrub habitats, in areas of elevation from 240 to 1,000 meters (790 to 3,280 feet) (CNPS 2012). It typically grows in exposed areas with a rocky substrate and that generally lacks an herbivorous understory (Reiser 1994). Rush-like bristleweed is an inconspicuous subshrub that does not grow at high density in locales where it is known to occur. This species is native to San Diego County and Baja California, Mexico, (CNPS 2012).

Urbanization and habitat loss are threatening this species, especially as rural development expands in the foothill areas of San Diego County (Reiser 1994). Because rush-like bristleweed is an inconspicuous species, it is likely that undiscovered populations are located throughout its range and possibly even within the Preserve.

Within the Preserve, this species is mapped within the northern and central areas of the Preserve (Figure 10). Specifically, approximately 289 individuals were found along the main ridge in the northern area of the Preserve and in scattered areas in the vicinity.

San Diego County viguiera (*Bahiopsis* [=*Viguiera*] *laciniata*)

CRPR 4.2, County List D

San Diego County viguiera is a shrub in the *Asteraceae* family and is found at elevations from 60 to 750 meters (197 to 2,460 feet) (CNPS 2012). This species is commonly found in open Diegan sage scrub communities, where it is typically codominant with California sagebrush (Reiser 1994). San Diego County viguiera occurs on a variety of soil types, including Olivenhain cobbly loam, Las Posas fine sandy loam, and Cieneba very rocky coarse sandy loam (Reiser 1994).

San Diego County viguiera is found in Orange and San Diego Counties, as well as in Baja California and Sonora, Mexico, (CNPS 2012). This species is common in the foothills region of San Diego County, including the Jamul Mountains, near Otay Lake, and near Syquan Indian Reservation, among other locales (Reiser 1994).

This species is declining but locally common throughout southern San Diego County and still occurs as a dominant shrub in many habitats (CNPS 2012, Reiser 1994). As is common with other special-status plant species, this species is threatened by development (CNPS 2012). This species is mapped throughout much of the Preserve, including a large area within the southern region (Figure 10). The estimated population size is greater than 10,000 individuals within this area.

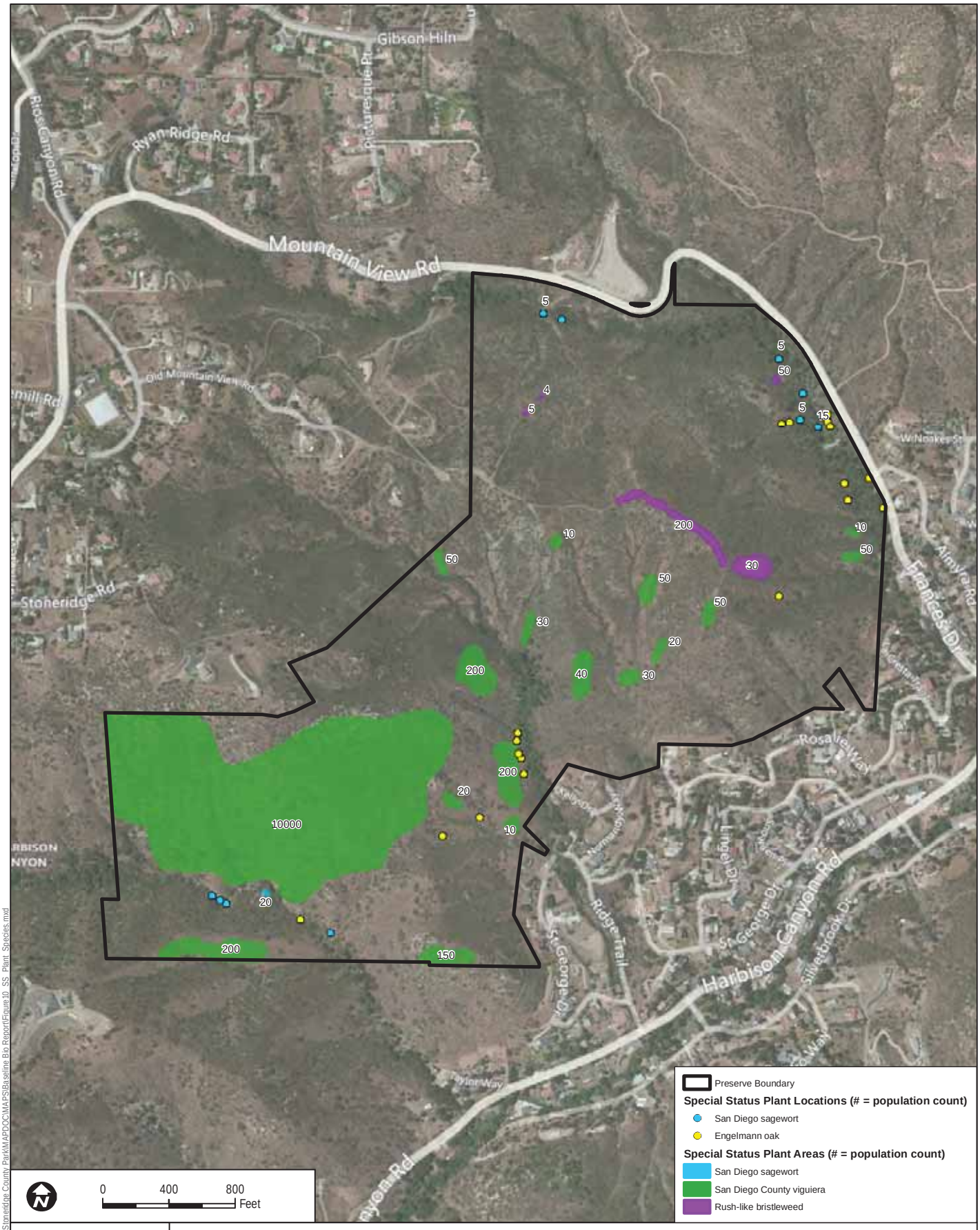
San Diego (Palmer's) Sagewort (*Artemisia palmeri*)

CRPR 4.2, County List D

San Diego sagewort (also known as Palmer's sagewort) is an aromatic herb typically located in perennial creeks and drainages near the coast (Reiser 1994). In California, San Diego sagewort is found only in San Diego County (CNPS 2012). This species is found in a wide range of habitat types, including chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland, in sandy, mesic conditions between 15 and 915 meters (50 and 3,000 feet) AMSL (CNPS 2012). San Diego sagewort is most often found in a riparian context and in shaded understories beneath willow, sycamore, or cottonwood canopy. Occasionally it is also present beneath coast live oak canopy but in decidedly mesic circumstances (Reiser 1994).

This species has an extensive range in San Diego County and is known from Peñasquitos Creek, Escondido Creek, Rose Canyon, Tijuana River Valley, and Dulzura Creek, among other perennial drainages. San Diego sagewort is declining due to stream channelization or flood control projects, such as the San Diego River channelization project (Reiser 1994).

This species was mapped in coast live oak woodlands within the Preserve, primarily along the northern and southern borders (Figure 10). Approximately 56 individuals were mapped, although there are likely more individuals present in the Preserve.



DUDEK

6680-09

SOURCE: Bing

FIGURE 10

Special Status Plant Locations

Stoneridge Preserve - Baseline Biodiversity Survey

Z:\Projects\6680\6680\6680009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure10_SS_Plant_Species.mxd

INTENTIONALLY LEFT BLANK

4.2.2 Special-Status Plant Species with High Potential to Occur

Based on an analysis of the elevation, soils, vegetation communities, and level of disturbance of the site, in conjunction with the known distribution of special-status species in the vicinity of the Preserve and the results of rare plant surveys, one special-status plant species has a high potential to occur in the Preserve: Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*).

Robinson's Pepper-grass (*Lepidium virginicum* var. *robinsonii*)

CRPR 1B.2, County List A

Robinson's pepper-grass is an annual herb in the *Brassicaceae* family (CNPS 2012). It grows in openings in chaparral and sage scrub communities in the foothills of Southern California. Dry, exposed areas are typical microhabitat characteristics where this species is found (Reiser 1994). Robinson's pepper-grass blooms from January to July and is found at elevations from 1 to 885 meters (3 to 2,904 feet) AMSL (CNPS 2012).

Robinson's pepper-grass is found near the Preserve in the Harbison Canyon vicinity. Habitat and local site characteristics within the Preserve would support this species. Robinson's pepper-grass is threatened locally due to development, invasion by non-native plants, and recreation, although it is generally presumed stable in Southern California (Reiser 1994, CNPS 2012).

4.2.3 Non-Native and/or Invasive Plants

A total of 29 non-native plant species were identified in the Preserve. Table 5 lists the 18 target non-native invasive species that were mapped within the Preserve, along with their associated Cal-IPC Inventory Ranking. Target non-native invasive species were selected based on their invasive potential, prevalence throughout the Preserve, and ability for management. These target non-native invasive plant species locations are shown on Figure 11.

Table 5
Non-Native Plant Species of Concern within the Preserve

Common Name[1]	Scientific Name	Cal-IPC Rating[2]
Rose Natal grass	*Melinis repens* ssp. *repens*	None
Red river gum	*Eucalyptus camaldulensis*	Limited
Canary Island date palm	*Phoenix canariensis*	Limited
Peruvian peppertree	*Schinus molle*	Limited
Silver wattle	*Acacia dealbata*	Moderate
Tree of heaven	*Ailanthus altissima*	Moderate
Slender oat	*Avena barbata*	Moderate

Table 5
Non-Native Plant Species of Concern within the Preserve

Common Name[1]	Scientific Name	Cal-IPC Rating[2]
Black mustard	*Brassica nigra*	Moderate
Italian plumeless thistle	*Carduus pycnocephalus* ssp. *pycnocephalus*	Moderate
Maltese star thistle	*Centaurea melitensis*	Moderate
Bull thistle	*Cirsium vulgare*	Moderate
Crown daisy	*Glebionis* [=*Chrysanthemum*] *coronaria*	Moderate
Shortpod mustard	*Hirschfeldia incana*	Moderate
Tree tobacco	*Nicotiana glauca*	Moderate
Crimson fountaingrass	*Pennisetum setaceum*	Moderate
Washington fan palm	*Washingtonia robusta*	Moderate
Pampas grass	*Cortaderia selloana*	High
Saltcedar	*Tamarix ramosissima*	High

[1]Observed locations of non-native plant species mapped on Figure 11.

[2] Source: Cal-IPC California Invasive Plant Inventory Database, updated June 2012. Overall rating listed for southwest region, factoring impact, invasiveness, distribution, and documentation level.
Inventory Categories
High: Species have severe ecological impacts, are conducive to moderate to high rates of dispersal/establishment, and most are widely spread.
Moderate: Species have substantial and apparent, but generally not severe, ecological impacts; are conducive to moderate to high rates of dispersal, though establishment is generally dependent on ecological disturbance; and distribution may range from limited to widespread.
Limited: Species are invasive, but their ecological impacts are minor on a statewide level, or there was not enough information to justify a higher score; have low to moderate rates of invasiveness; and are generally limited but may be locally persistent and problematic.
None: Species has not been listed by Cal-IPC.

Rose Natal grass (*Melinis repens* ssp. *repens*)

Rose Natal grass is an annual or a perennial grass in the *Poaceae* family that is native to South Africa but has been introduced to North and South America (Invaders 2012). In the United States, this species now occurs in states along the Gulf of Mexico and the southwest, including Southern California. Rose Natal grass is not rated by the Cal-IPC (Cal-IPC 2012). Approximately 16 individuals were mapped within two locations in the Preserve in both the southern and northern riparian corridors (Figure 11). Rose Natal grass tends to occur more frequently in rocky outcrops, particularly those with a southern aspect.

Red river gum (*Eucalyptus camaldulensis*)

Eucalyptus is a genus of large trees that have been widely planted throughout California. Some species commonly escape into natural areas and can spread rapidly, particularly in riparian habitats. Red river gum increases the risk of wildfires and overbears native plants and trees. This species has a Limited Cal-IPC Inventory Ranking (Cal-IPC 2012). One individual was mapped within the riparian corridor on the northern boundary of the Preserve (Figure 11).

Canary Island date palm (*Phoenix canariensis*)

The Canary Island date palm is native to the Canary Islands, located off the coast of Africa. This species has escaped cultivated areas and is now found throughout riparian corridors in Southern California (Cal-IPC 2012). Canary Island date palms typically grow in groups that then restrict light and other resources to native species growing in the understory. This species has a Limited Cal-IPC Inventory Ranking (Cal-IPC 2012). Within the Preserve, one individual was mapped within the riparian corridor along the eastern border (Figure 11).

Peruvian peppertree (*Schinus molle*)

Peruvian peppertree is an aromatic, evergreen shrub or tree. Peruvian peppertree has escaped cultivation to become invasive in Central and Southern California (Cal-IPC 2012). This species has a Limited Cal-IPC Inventory Ranking (Cal-IPC 2012). Two individuals were mapped within the riparian corridor along the northern border (Figure 11).

Silver wattle (*Acacia dealbata*)

Silver wattle is commonly found in disturbed areas adjacent to coastal prairies, riparian areas, and coniferous forests (Cal-IPC 2012). This species fixes nitrogen in the soil, thereby altering soil chemistry. Fallen leaves may have allelopathic effects, thereby restricting growth of native plants that would otherwise grow in these habitats (Cal-IPC 2012). This species has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). One individual was mapped within the northern part of the Preserve, adjacent to Mountain View Road (Figure 11).

Tree of heaven (*Ailanthus altissima*)

Tree of heaven is widely distributed in somewhat disturbed lands throughout California and is commonly found in coastal areas throughout the Sierra foothills (Cal-IPC 2012). This species has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). One individual was mapped along the Ridge Trail in the central region of the Preserve (Figure 11).

Slender oat (*Avena barbata*)

Slender oat is found throughout grasslands in California and is particularly prolific in sandy or low nutrient soils. It is commonly found along road edges or other disturbed areas (Cal-IPC 2012). This species has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Approximately 1,000 individuals were mapped along the southwestern border of the Preserve, in conjunction with two other non-native species, Maltese star thistle (*Centaurea melitensis*) and shortpod mustard (*Hirschfeldia incana*) (Figure 11).

Black mustard (*Brassica nigra*)

Black mustard is an annual in the *Brassicaceae* family (Cal-IPC 2012). This species contains allelopathic chemicals that prohibit the growth and germination of native plants, and this species spreads rapidly. Black mustard has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Ten individuals were mapped on the eastern border of the Preserve along with 50 individual shortpod mustards (Figure 11).

Italian plumeless thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*)

Italian plumeless thistle is an annual forb found in disturbed or open areas throughout California, including road edges, annual grasslands, and pastures (Cal-IPC 2012). This species has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Approximately 545 individuals of this species are scattered throughout riparian corridors in the Preserve, and it is most abundant in the northern region (Figure 11).

Maltese star thistle (*Centaurea melitensis*)

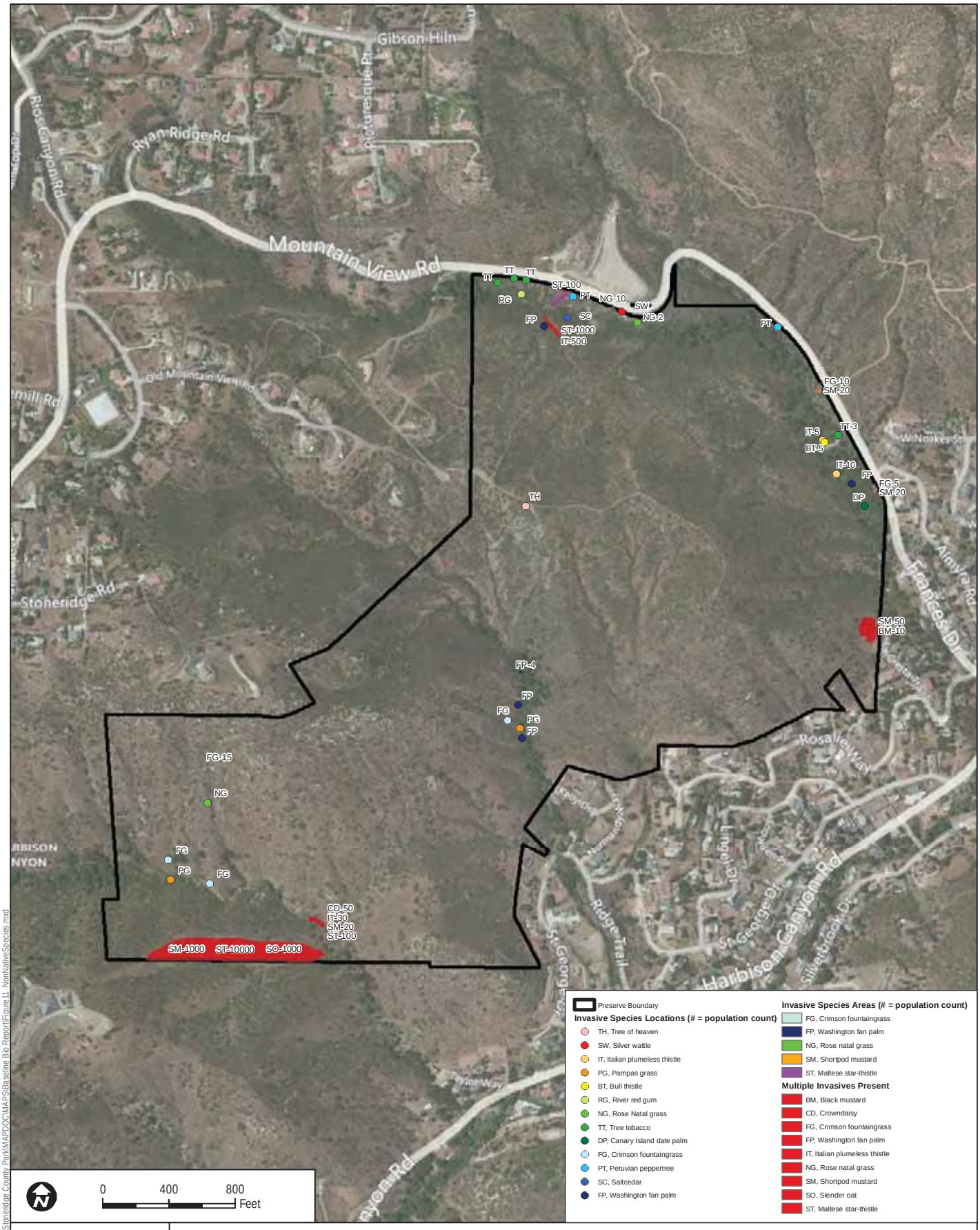
Maltese star thistle is widespread in open or disturbed areas in the Western United States. This species often occupies grasslands, open woodlands, roadsides, and agricultural fields (Cal-IPC 2012). This species has more invasive potential in Southern California than elsewhere in the state, and it has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Populations of at least 11,200 individuals were mapped within the northern and southern regions of the Preserve (Figure 11).

Bull thistle (*Cirsium vulgare*)

Bull thistle is common in coastal grassland, marsh, and forest habitats, although it is of particular management concern in areas that are repeatedly disturbed, including overgrazed pastures or areas of recent burns (Cal-IPC 2012). Bull thistle outcompetes native species for limited resources, such as water, nutrients, and space (Cal-IPC 2012). This species has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Within the Preserve, five individuals were mapped in the riparian corridor within the eastern region of the Preserve (Figure 11).

Crown daisy (*Glebionis* [=*Chrysanthemum*] *coronaria*)

Crown daisy is an escaped ornamental species that inhabits coastal environments and easily invades disturbed areas. This species forms large, dense stands that may exclude native vegetation (Cal-IPC 2012). Crown daisy has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Approximately 50 individuals were mapped within the southern riparian corridor (Figure 11).



Z:\Projects\668000\668009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure 11 NonNativeSpecies.mxd

DUDEK

6680-09

SOURCE: Bing

FIGURE 11

Invasive Plant Species Locations

Stoneridge Preserve - Baseline Biodiversity Survey

INTENTIONALLY LEFT BLANK

Shortpod mustard (*Hirschfeldia incana*)

Shortpod mustard is a biennial or perennial forb found in coastal scrub and grassland habitats (Cal-IPC 2012). This species has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Shortpod mustard was mapped throughout the Preserve, including a population of 1,110 individuals in the southern region of the Preserve (Figure 11).

Tree tobacco (*Nicotiana glauca*)

Tree tobacco is a short-lived tree or shrub that grows up to 20 feet tall. Introduced to California approximately 100 years ago, tree tobacco can be found in disturbed soils, vacant lots, and along roadsides, streamsides, and other riparian areas up to 1,524 meters (5,000 feet) AMSL (Cal-IPC 2012). This species has a Moderate Cal-IPC Inventory Ranking (Cal-IPC 2012). Six individuals were mapped in the riparian corridor along the northern and eastern region of the Preserve (Figure 11).

Crimson fountaingrass (*Pennisetum setaceum*)

Crimson fountaingrass is an annual or perennial grass in the *Poaceae* family that has been naturalized in California and is now found throughout Southern California, the Central Valley, and along the coast to the Bay Area (Jepson Flora Project 2012). Crimson fountaingrass increases fuel load and, therefore, the frequency, intensity, and spread of fire. It is found within chaparral, grassland, and coastal dune and scrub habitats. This species is rated as Moderate by the Cal-IPC (Cal-IPC 2012). Crimson fountaingrass is mapped primarily in three regions of the Preserve: adjacent to the southern riparian corridor, within the central riparian corridor, and throughout the eastern riparian corridor (Figure 11). There were 33 individuals mapped in the Preserve.

Washington fan palm (*Washingtonia robusta*)

Washington fan palm is a species of palm tree commonly used for landscaping, which has become invasive in riparian areas, orchards, and landscaped areas (Cal-IPC 2012). It is known to create monotypic stands in riparian areas, and dead fronds of the tree can create a fire hazard. It can spread into native vegetation communities when seeds are washed downstream in drainages or birds disperse seeds into areas with sufficient soil moisture for the palm to germinate and establish (Cal-IPC 2012). This species is rated Moderate by the Cal-IPC (Cal-IPC 2012). Four individuals of this species were mapped in the northern and central riparian corridors within the Preserve (Figure 11).

Pampas grass (*Cortaderia selloana*)

Pampas grass is a large, clumping perennial grass about 2 meters (7 feet) tall. This is an aggressively spreading, ornamental species that produces significant amounts of biomass. This makes the species extremely flammable, increasing the potential for fire ignition and/or spread. This species produces an abundance of seed, which is light and can easily be windblown into surrounding areas. This species is rated High by the Cal-IPC (Cal-IPC 2012). Two individuals were mapped within the central and southern riparian corridors (Figure 11).

Saltcedar (*Tamarix ramosissima*)

Saltcedar (tamarisk) is a shrub or a tree found throughout California along streams and lakeshores. Saltcedar can substantially alter geomorphology, groundwater availability, soil chemistry, fire frequency, plant community composition, and native wildlife diversity (Cal-IPC 2012). Saltcedar can stabilize stream terraces, deepening flood channels, which can result in unsuitable habitat for arroyo toads (*Anaxyrus californicus*), which are found within the Sweetwater Watershed. Saltcedar is rated as High by the Cal-IPC (Cal-IPC 2012). Within the Preserve, one individual was mapped within the northern riparian corridor (Figure 11).

4.2.3.1 Additional Non-native Plant Species

Ubiquitous non-native annual plant species are also present intermittently throughout the Preserve. Additional non-native plant species include smooth cat's ear (*Hypochaeris glabra*), prickly lettuce (*Lactuca serriola*), bromes, and rat-tail fescue (*Festuca myuros*), among others. These non-native plant species were not mapped either because they are not listed as invasive by Cal-IPC and pose little threat of invading native habitat or because of their broad distribution across the Preserve.

4.3 Wildlife

A total of 115 wildlife species were observed or detected within the Preserve during the 2012 surveys including: 1 amphibian, 10 reptiles, 43 birds, 27 mammals, and 34 invertebrates. A total of 25 special-status species were observed or detected, including seven species covered under the MSCP. Appendix B lists all of the wildlife species observed or detected within the Preserve.

4.3.1 Invertebrates

A number of large invertebrates were captured within herpetological pitfall trap arrays. These were identified to genus where feasible. These included armored stink beetle (*Eleodes armata*), wooly ground beetle (*Eleodes osculans*), darkling ground beetle (*Tenebrionidae* spp.), billbugs (*Sphenophorus* sp.), Jerusalem cricket, field cricket (Subfamily *Gryllinae*), ants (Family

Formicidae), velvet ants (Family *Mutillidae*), common silverfish (*Lepisma* sp.), pill bugs (Family *Armadillidiidae*), centipedes (Class *Chilopoda*), tarantula (Superfamily *Theraphosoidea*), sac spiders (*Trachelas* sp.), wolf spider (Family *Lycosidae*), jumping spider (Family *Salticidae*), windscorpion (Family *Ammotrechidae*), and scorpion (Order *Scorpiones*). Other invertebrates observed during surveys included bees (Superfamily *Apoidae*, primarily *Apis mellifera* [European honey bee] or *Bombus* spp. [bumble bee]), wasps (Superfamily *Vespoidea*, primarily *Polistes* sp. [paper wasp]), harvester ant colonies (*Pygonomyrex* sp.), mosquitos (Family *Culicidae*), harvester ant colonies (*Pogonomyrmex* spp.), flies (Order *Diptera*), dragonflies (Infraorder *Anisoptera*), and damselflies (Suborder *Zygoptera*).

4.3.1.1 Butterflies

Ten butterfly species were observed during the survey conducted on the Preserve, including blue (*Plebejus* sp.), white (*Pieris* sp.), anise swallowtail (*Papilio zelicaon*), California dogface (*Colias eurydice*), perplexing hairstreak (*Callophrys perplexa*), brown elfin (*Callophrys augustinus*), lady (*Vanessa* sp.), funereal duskywing (*Erynnis funeralis*), Behr's metalmark (*Apodemia mormo virgulti*), and acmon blue (*Plebejus acmon acmon*).

Two special-status butterfly species, Quino checkerspot and Hermes copper butterfly, have potential to occur within the Preserve based on the Preserve location, known habitat characteristics and the species' distribution. Neither species was detected during the general butterfly survey. Prior to conducting the general butterfly survey, the first pass of rare plant surveys was completed and locations of any host plants for the two species were noted. Butterfly surveys included areas with suitable butterfly habitat (e.g., hilltops, ridgelines) to maximize species diversity.

The general butterfly survey was conducted in mid-April, as most species are active at this time. This survey corresponded with the known flight period of Quino checkerspot (late February through April); Hermes copper, on the other hand, has a later flight period (mid-May through July). However, general wildlife surveys conducted later in the summer could have detected this species if present during its flight period; biologists performing surveys were familiar with identification of both butterfly species.

Although the host plants for Quino checkerspot, (*Castilleja exserta* ssp. *exserta*) or plantain (*Plantago erecta*), were not observed within the Preserve, there was medium to high potential for this species to occur within the Preserve. The habitat within the Preserve is suitable for this species, including open chaparral habitat, ridgelines, and sloping hills. The absence of host plants does not necessarily indicate that Quino checkerspot is absent from the Preserve and therefore surveys were conducted within this species' flight period (USFWS 2002). Quino checkerspot was not recorded within the Preserve; the nearest known location is 13.96 kilometers (8.67 miles) southwest of the Preserve at the San Diego National Wildlife Refuge (CDFG 2012c).

During vegetation mapping, it was determined that the Preserve also supports a suitable habitat for Hermes copper, which includes a matrix of spiny redberry and California buckwheat located within 10 feet of each other (County of San Diego 2010b). Although the butterfly survey was outside of the species' flight period, biologists conducting surveys later in the summer could have detected this species. The nearest recorded observation of Hermes copper was 5.8 kilometers (3.6 miles) from the Preserve at Loveland Reservoir (Deutschman et al. 2010).

4.3.2 Herpetofauna

4.3.2.1 Amphibians

Pursuant to the contract with DPR, no surveys for amphibians were conducted during the survey effort for the Preserve. One species of amphibian, the Pacific treefrog (*Pseudacris regilla*), was heard calling from the riparian areas on site.

4.3.2.2 Reptiles

A total of 10 reptile species were observed within the Preserve. Two species were observed during coverboard surveys: coast horned lizard (*Phrynosoma blainvillii* ssp. *coronatum*) and southern alligator lizard (*Elgaria multicarinata*). Seven species were observed during herpetological arrays, including orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), coastal western whiptail (*Aspidoscelis tigris stejnegeri*), San Diego banded gecko (*Coleonyx variegatus abbotti*), western skink (*Plestidon skiltonianus*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), western fence lizard (*Sceloporus occidentalis*), and common side-blotched lizard (*Uta stansburiana*). Two reptile species were also recorded as incidental observations: northern red diamond rattlesnake (*Crotalus ruber ruber*) and coast patch-nosed snake.

Orange-throated whiptail was the most common reptile species observed. Four of the reptile species observed were CDFG California Species of Special Concern (CSC): coast patch-nosed snake, northern red diamond rattlesnake, coast horned lizard, and orange-throated whiptail. Orange-throated whiptail and coast horned lizard are covered under the MSCP. San Diego banded gecko is a County of San Diego Sensitive Animal Group 1 Species and coastal western whiptail is a County of San Diego Sensitive Animal Group 2 Species.

There was incidental mortality of one orange-throated whiptail during herpetological surveys. One of the traps had not been properly closed at the end of the July survey period, and the dead animal was discovered when the trap was opened in August.

Table 6, Pitfall Trap Results, provides a summary of the species observed during pitfall trap herpetological surveys. Table 7, Coverboard Survey Results, summarizes the species observed during the coverboard surveys. Survey locations are shown on Figure 8.

Table 6
Pitfall Trap Results[1]

Common Name	Scientific Name	Status[2]	June 6-8, 2012		July 10-13, 2012		Aug. 14-17, 2012		Total
			1	*2*	*1*	*2*	*1*	*2*	
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	CSC, Group 2	—	—	1	—	—	—	1
Coastal western whiptail	*Aspidoscelis tigris stejnegeri*	Group 2	2	1	—	—	—	—	3
Common side-blotched lizard	*Uta stansburiana*	None	2	—	—	3	3	1	9
Orange-throated whiptail	*Aspidoscelis hyperythra beldingi*	CSC, Group 2, MSCP	3	1	4	3	2	2	15
San Diego banded gecko	*Coleonyx variegatus abbotti*	Group 1	—	—	—	—	1	—	1
Western fence lizard	*Sceloporus occidentalis*	None	—	—	—	—	—	2	2
Western skink	*Plestidon skiltonianus*	None	—	—	—	1	—	—	1
		Total	7	2	5	7	6	5	32

[1]See Figure 8 for Herpetological Array locations.
[2] CSC: California Species of Special Concern (CDFG)
MSCP: Covered species under the MSCP
Group 1: Animals of high sensitivity (listed or specific natural history requirements) (County)
Group 2: Animals declining but not in immediate threat of extinction or extirpation (County)

Table 7
Coverboard Survey Results

Coverboard Number 1	Survey Date		
	5/24/12	*6/25/12*	*7/25/12*
C-S-1	—	—	—
C-S-2	—	—	—
C-S-3	—	—	—
C-S-4	—	—	—
C-S-5	—	—	—
C-S-6	—	—	—
C-S-7	Southern alligator lizard (*Elgaria multicarinata*) [No special status designations]	—	Coast horned lizard (*Phrynosoma blainvillii* ssp. *coronatum*) [CSC , Group 2, MSCP]
C-S-8	—	—	—

[1]See Figure 8 for Coverboard Survey locations.
CSC: California Species of Special Concern (CDFG)
MSCP: Covered species under the MSCP
Group 2: Animals declining but not in immediate threat of extinction or extirpation (County)

4.3.3 Birds

Forty-three bird species were observed within the Preserve during avian point count surveys. The most common species observed in terms of numbers of individuals recorded were lesser goldfinch (*Spinus psaltria*), house finch (*Carpodacus mexicanus*), bushtit (*Psaltriparus minimus*) and wrentit (*Chamaea fasciata*). The following birds were observed during the nocturnal surveys: barn owl (*Tyto alba*), common poorwill (*Phalaenoptilus nuttallii*), and great horned owl (*Bubo virginianus*). Appendix B lists the bird species observed within the Preserve

Eight special-status bird species were observed during avian point count surveys: coastal California gnatcatcher (*Polioptila californica californica*), barn owl, Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), turkey vulture (*Cathartes aura*), western bluebird (*Sialia mexicana*), and white-tailed kite (*Elanus leucurus*).

Many species, such as the southern California rufous-crowed sparrow or western bluebird are likely permanent residents of the Preserve and are presumed to nest within the Preserve. Other species, such as turkey vulture or white-tailed kite, may nest on site but likely use the Preserve primarily for foraging and occasionally for roosting. No species were observed with nests or exhibiting nesting behavior.

Table 8, Avian Point Count Survey Results, provides a summary of the results of the avian point counts for each survey point. The numbers in each cell represent the number of unique species counts on that particular day. The number in parentheses that follows is the total number of birds observed, including any flyovers. Survey locations are shown on Figure 8.

Table 8
Avian Point Count Survey Results

	April 26, 2012		May 24, 2012		June 25, 2012		
Survey Point	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	Total
1	10 (21)	1 (1)	17 (36)	1 (1)	10 (28)	2 (2)	25 (89)
2	15 (24)	1 (1)	18 (58)	0	12 (27)	1 (3)	28 (113)
3	12 (23)	2 (3)	18 (37)	1 (1)	11 (21)	1 (1)	25 (86)
4	15 (45)	0	11 (39)	2 (2)	9 (27)	0	23 (113)
5	15 (27)	1 (1)	13 (30)	1 (1)	14 (34)	0	24 (93)
Total	29 (140)	2 (6)	30 (200)	2 (5)	23 (137)	2 (6)	43 (494)

Note: The numbers represent unique species counts. The number in parentheses is the total number of individuals, including flyover species if any were observed.

Survey point BC-SR-2, which was located in the coast live oak woodland near the northeastern border of the Preserve, had the greatest species richness and diversity. However, bird species richness and diversity did not vary substantially between survey points. Survey points BC-SR-2 and BC-SR-4 had the highest levels of avian species abundance.

Table 9, Avian Point Count Species Observed, describes the species recorded during avian point count surveys at the Preserve. The bird species observed during surveys are listed by site, date, and time of day.

4.3.4 Mammals

4.3.4.1 Small Mammals

Nine small mammals, all rodents, were trapped on the Preserve during the small mammal surveys. These included the special-status species Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*). The most common species trapped was the Dulzura pocket mouse. One incidental capture of a southern California rufous-crowned sparrow occurred at Array-1 during small mammal trapping.

Table 10, Small Mammal Survey Results, provides a summary of the total number of individuals captured in each trapline during the trapping sessions. The first number is the number of new individuals captured, and the second number, in parentheses, is the total number captured, including recaptured individuals. Identification of the two woodrats (*N. lepida intermedia* and *N. macrotis*) was based on size.

Three additional mammal species were also detected during surveys: Crawford's gray shrew (*Notiosorex crawfordi*), Botta's pocket gopher (*Thomomys bottae*), and California vole (*Microtus californicus*).

4.3.4.2 Bats

Eleven bat species were identified within the Preserve using the Anabat survey system, including pallid bat (*Antrozous pallidus*), big brown bat (*Eptesicus fuscus*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), Californian myotis (*Myotis californicus*), western small-footed myotis (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), canyon bat (*Parastrellus hesperus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*). Five of these species are CDFG CSC: pallid bat, western mastiff bat, western red bat, western yellow bat, and pocketed free-tailed bat.

Table 11, Bat Survey Results by Survey Pass, shows the number of minutes of bat activity for each species during each survey pass. Table 12, Bat Survey Results by Location, shows the number of minutes of bat activity for each bat survey location. Number of minutes of bat activity is more useful than exact numbers of individuals, because they are not marked, and thus we are unable to differentiate between individuals. Minutes of activity can be analyzed and compared to other sites more directly for future management and monitoring efforts.

Big brown bat was the most common species recorded. Other relatively common species included Yuma myotis and canyon bat. Overall surveys during the month of July were characterized by increased minutes of detection when compared with detection minutes during September surveys. Although most species were more common during July surveys, several species were overwhelmingly more common during September; these species included western yellow bat, California myotis, canyon bat, and Brazilian free-tailed bat.

4.3.4.3 Medium and Large Mammals

Three large mammal species were detected by the camera stations located on the Preserve: coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), and bobcat (*Lynx rufus*). Medium-sized mammals detected include striped skunk (*Mephitis mephitis*), brush rabbit (*Sylvilagus bachmani*), and California ground squirrel (*Spermophilus beecheyi*). A summary of the camera study results are provided in Table 13. Coyote was the most common species observed. Only one special-status species, mule deer, was recorded during wildlife camera study. This species is covered under the MSCP.

Table 9
Avian Point Count Species Observed

Common Name	Scientific Name	4/26/12 AM					4/26/12 PM					5/24/2012 AM					5/24/2012 PM					6/25/2012 AM					6/25/2012 PM					Total
		BC-SR-1	BC-SR-2	BC-SR-3	BC-SR-4	BC-SR-5	BC-SR-1	BC-SR-2	BC-SR-3	BC-SR-4	BC-SR-5	BC-SR-1	BC-SR-2	BC-SR-3	BC-SR-4	BC-SR-5	BC-SR-1	BC-SR-2	BC-SR-3	BC-SR-4	BC-SR-5	BC-SR-1	BC-SR-2	BC-SR-3	BC-SR-4	BC-SR-5	BC-SR-1	BC-SR-2	BC-SR-3	BC-SR-4	BC-SR-5	
Acorn woodpecker	*Melanerpes formicivorus*												2										1								3
American crow	*Corvus brachyrhynchos*																									4					4
Anna's hummingbird	*Calypte anna*				1							1										2									4
Ash-throated flycatcher	*Myiarchus cinerascens*														2																2
Barn owl	*Tyto alba*																										1	3				4
Bewick's wren	*Thryomanes bewickii*	1	1		1	1						1	1	2								1	1									10
Black-chinned hummingbird	*Archilochus alexandri*		1													1															2
Black-headed grosbeak	*Pheucticus melanocephalus*																					2	1									3
Black phoebe	*Sayornis nigricans*												1																			1
Black-throated gray warbler	*Setophaga nigrescens*	1																														1
Brown-headed cowbird	*Molothrus ater*											4																				4
Bushtit	*Psaltriparus minimus*		2	3	2							1	25	4		8																45
California quail	*Callipepla californica*			2	5	4						2	3	2											5							23
California thrasher	*Toxostoma redivivum*	1		1		2						1	1	1		1										1						9
California towhee	*Melozone crissalis*		2	3	2	1						1	2	1	1								2	1		1						17
Cassin's kingbird	*Tyrannus vociferans*		1			1										2							2	1	1	2						10
Cliff swallow	*Petrochelidon pyrrhonota*																					2										2
Coastal California gnatcatcher	*Polioptila californica californica*					1																										1
Common poorwill	*Phalaenoptilus nuttallii*						1		2		1						1		1	1	1											8
Common raven	*Corvus corax*		2	2	1	5						1	2	4	5	2						1	1	1	2	2						31
Cooper's hawk	*Accipiter cooperii*		1			1																		1	1							4
Great egret	*Ardea alba*					1																										1
Great horned owl	*Bubo virginianus*							1	1											1							1		1			5
Hooded oriole	*Icterus cucullatus*	1										1			1																	3
House finch	*Carpodacus mexicanus*				9	1						6	2	3	15							7	7	5	8	8						71
Hummingbird sp.	*Calypte* sp.				2								1	1	1																	5
Lesser goldfinch	*Spinus psaltria*	5	3	3	13							4	5	5	8	2						10	6	3	6	4						67
Mourning dove	*Zenaida macroura*	2	2	1	3	1						1	1	3	1	1						1	1		1	1						20
Northern mockingbird	*Mimus polyglottos*				1									1		1								1		1						5
Northern rough-winged swallow	*Stelgidopteryx serripennis*												2	2										1								5
Nuttall's woodpecker	*Picoides nuttallii*		2																													
Phainopepla	*Phainopepla nitens*											3		1		3										1						8
Red-shouldered hawk	*Buteo lineatus*		1																													1
Red-tailed hawk	*Buteo jamaicensis*			2	1	1						2	2		2								2	2								14
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	2			1	1							1	1																		6
Spotted towhee	*Pipilo maculatus*		1	1	2	3						3	2	2	2	4						1		2	1	3						27
Townsend's warbler	*Setophaga townsendi*	1																														1
Turkey vulture	*Cathartes aura*													1	1																	2
Violet-green swallow	*Tachycineta thalassina*			2																												2
Western scrub-jay	*Aphelocoma californica*	2	1	1	1							1	2			1						1	2		2	1						15
White-tailed kite	*Elanus leucurus*													1																		1
White-throated swift	*Aeronautes saxatalis*		2																							1						3
Wrentit	*Chamaea fasciata*	5	2	2		3						3	3	2		4							2	3		4						33

Table 10
Small Mammal Survey Results

Species			7/30 -8/1/12				8/20 -22/12				
Common Name	*Scientific Name*	Status	*Array-1 A*	*Array-1 B*	*Array-2 A*	*Array-2 B*	*Array-1 A*	*Array-1 B*	*Array-2 A*	*Array-2 B*	Total
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	CSC, Group 2	13(20)	4(7)	1(2)	1(1)	16(22)	7(12)	3(4)	2(6)	47(74)
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	CSC, Group 2	2(4)	3(4)	1(2)	3(3)	3(4)	3(5)	4(6)	—	19(28)
Dulzura kangaroo rat	*Dipodomys simulans*	None	—	2(2)	4(6)	5(8)	—	1(3)	6(13)	9(15)	27(47)
Big-eared woodrat	*Neotoma macrotis*	None	1(2)	—	—	—	2(4)	2(2)	—	—	5(8)
San Diego Desert woodrat	*Neotoma lepida intermedia*	CSC, Group2	—	—	—	—	1(3)	—	—	1(1)	2(4)
California mouse	*Peromyscus californicus*	None	3(4)	5(5)	3(6)	1(2)	5(7)	5(6)	5(7)	6(7)	33(44)
Cactus mouse	*Peromyscus eremicus*	None	1(3)	4(4)	2(2)	—	2(2)	5(7)	—	—	14(18)
California ground squirrel	*Spermophilus beecheyi*	None	—	1(1)	—	—	—	1(1)	—	—	2(2)
Western spotted skunk	*Spilogale gracilis*	None	—	—	—	—	—	1(1)	—	—	1(1)
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	WL, Group 1, MSCP	1(1)	—	—	—	—	—	—	—	1(1)
		Total	21(34)	19(23)	11(18)	10(14)	29(42)	25(37)	18(30)	18(29)	151(227)

CSC: California Species of Special Concern (CDFG)
WL: Watch List (CDFG)
MSCP: Covered species under the MSCP
Group 1: Animals of high sensitivity (listed or specific natural history requirements) (County)
Group 2: Animals declining but not in immediate threat of extinction or extirpation (County)

Note: The first number is the number of new individuals captured, and the second number, in parentheses, is the total number captured, including recaptured individuals. Also, individuals caught during the first trapping session may have been recaptured during the second trapping period but would have been recorded as new individuals.

Table 11
Bat Survey Result by Survey Pass (in minutes of detection)

Common Name	Scientific Name	Status[1]	July[2]		September[2]		Total Minutes
			North	South	North	South	
Pallid bat	*Antrozous pallidus*	CSC, Group 2	8	3	0	1	***12***
Big brown bat	*Eptesicus fuscus*	None	152	155	94	54	***455***
Western mastiff bat	*Eumops perotis*	CSC, Group 2	1	2	1	0	***4***
Western red bat	*Lasiurus blossevillii*	CSC, Group 2	3	0	0	2	***5***
Western yellow bat	*Lasiurus xanthinus*	CSC	0	0	2	9	***11***
California myotis	*Myotis californicus*	None	1	0	4	0	***5***
Western small-footed myotis	*Myotis ciliolabrum*	Group 2	4	8	2	4	***18***
Yuma myotis	*Myotis yumanensis*	Group 2	60	72	13	21	***166***
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	CSC, Group 2	18	33	0	4	***55***
Canyon bat	*Parastrellus hesperus*	None	14	15	31	45	***105***
Brazilian free-tailed bat	*Tadarida brasiliensis*	None	1	2	9	23	***35***
		Total	262	290	156	163	***871***

[1] CSC: California Species of Special Concern (CDFG); Group 2: Animals declining but not in immediate threat of extinction or extirpation (County)
[2] Refer to Table 3 for the specific dates of each bat survey location

Table 12
Bat Survey Results by Location (in minutes of detection)

Species		Status[1]	Location		Total
Common Name	*Scientific Name*		*North*	*South*	
Pallid bat	*Antrozous pallidus*	CSC, Group 2	8	4	12
Big brown bat	*Eptesicus fuscus*	None	246	209	455
Western mastiff bat	*Eumops perotis*	CSC, Group 2	2	2	4
Western red bat	*Lasiurus blossevillii*	CSC, Group 2	3	2	5
Western yellow bat	*Lasiurus xanthinus*	CSC	2	9	11
California myotis	*Myotis californicus*	None	5	0	5
Western small-footed myotis	*Myotis ciliolabrum*	Group 2	6	12	18
Yuma myotis	*Myotis yumanensis*	Group 2	73	93	166
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	CSC, Group 2	18	37	55
Canyon bat	*Parastrellus hesperus*	None	45	60	105
Brazilian free-tailed bat	*Tadarida brasiliensis*	None	10	25	35
		Total	418	453	871

[1] CSC: California Species of Special Concern (CDFG); Group 2: Animals declining, but not in immediate threat of extinction or extirpation (County)

Table 13
Camera Study Results

Common Name	Scientific Name	Status[2]	Survey Dates/Observations[1]			Total
			May 22–June 4	*June 26–July 10*	*July 3–August 14*	
Coyote	*Canis latrans*	None	19	20	23	62
Mule deer	*Odocoileus hemionus*	Group 2, MSCP	3	2	0	5
Bobcat	*Lynx rufus*	None	0	1	0	1
Striped skunk	*Mephitis mephitis*	None	3	1	0	4
Brush rabbit	*Sylvilagus bachmani*	None	3	0	0	3
California ground squirrel	*Spermophilus beecheyi*	None	1	1	0	2
		Total	29	25	23	77

[1] Number identified refers to the total number of detections. In many cases, these represent numerous visits by the same individual(s) over the study period. However, due to the study design (i.e., no mark and recapture involved), it is not possible to differentiate between individuals in most cases.
[2]Status: Group 2 - Animals declining, but not in immediate threat of extinction or extirpation (County)
MSCP - Species covered under the MSCP

4.3.5 Special-Status Wildlife Observed

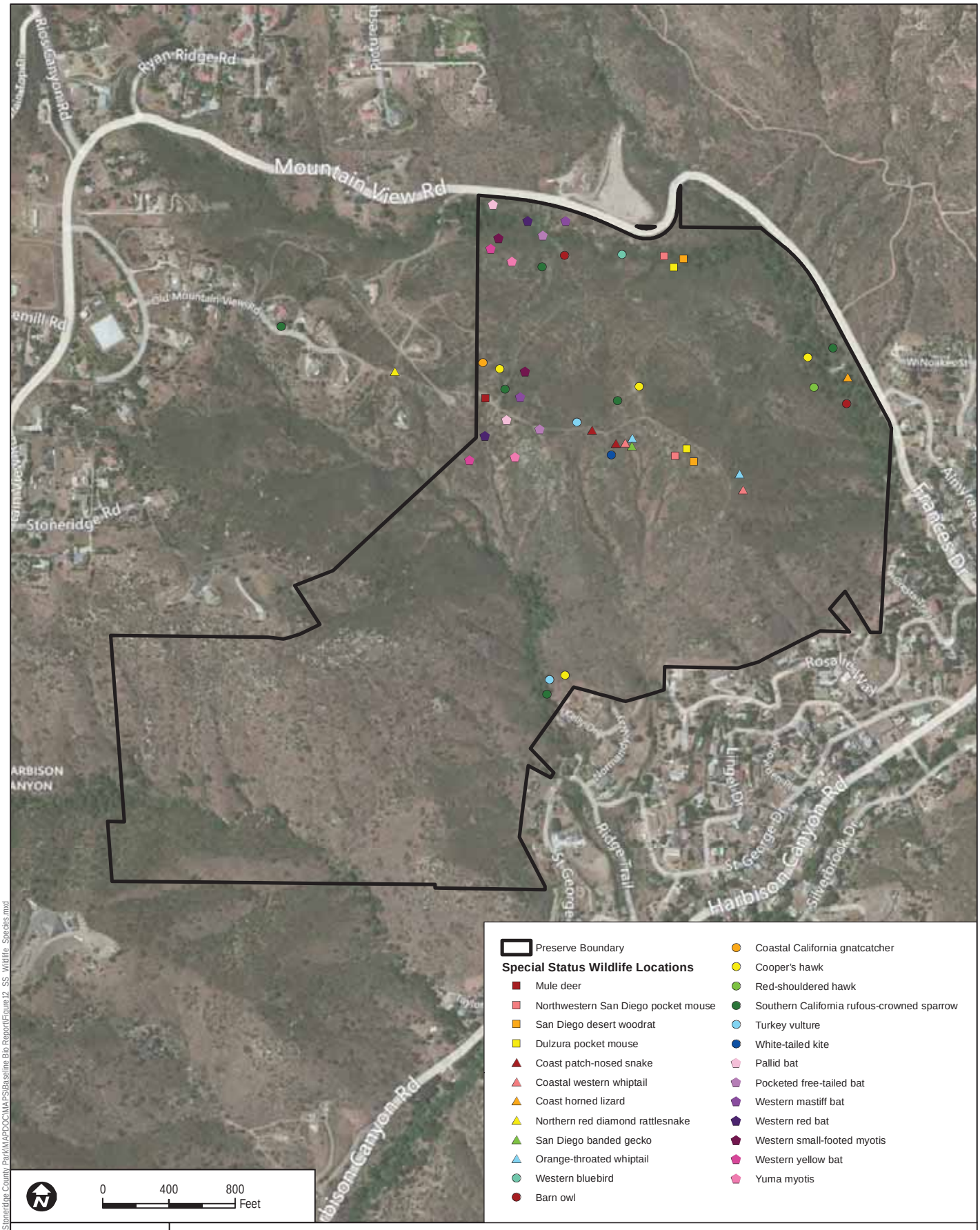
Twenty-five special-status wildlife species were observed or detected within the Preserve during the 2012 surveys (Figures 12), seven of which are covered under the MSCP SAP. Observed special-status species are discussed as follows.

Reptiles

Coast horned lizard (*Phrynosoma blainvillii* ssp. *coronatum*)

Species of Special Concern, County Group 1, MSCP Covered Species

The coast horned lizard occurs throughout most of California in locations west of the desert and Cascade-Sierran highlands in elevations from sea level to around 2,438 meters (8,000 feet) AMSL (Stebbins 2003). Despite a wide-ranging distribution, the coast horned lizard seems to be restricted to localized populations because of its association with loose soils that have a high sand content (Jennings and Hayes 1994). The species is found in a wide variety of vegetation types with the requisite loose sandy soils, including California sagebrush scrub, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest (Klauber 1939; Stebbins 1954). Up to 90% of the diet of the coast horned lizard consists of native harvester ants (Pianka and Parker 1975), and coast horned lizards do not appear to eat non-native Argentine ants (*Linepithema humile*) (Jennings and Hayes 1994).



Z:\Projects\6680\6680009 - Stoneridge County Park\MAPDOC\MAPS\Baseline Bio Report\Figure12_SS_Wildlife_Species.mxd

DUDEK

6680-09

SOURCE: Bing

FIGURE 12

Special Status Wildlife Locations

Stoneridge Preserve - Baseline Biodiversity Survey

INTENTIONALLY LEFT BLANK

One coast horned lizard was observed during the coverboard surveys within the Preserve. The individual was found underneath C-SR-4 (Figure 12). There is suitable chaparral habitat within the Preserve for this species. Harvester ants were recorded throughout the Preserve, and no Argentine ants were observed.

Coast patch-nosed snake (*Salvadora hexalepis virgultea*)

California Species of Special Concern, County Group 2

The coast patch-nosed snake ranges from west-central Nevada south to the tip of Baja California and northwestern Sonora and from coastal Southern California to Southwestern Utah and central Arizona. The coast patch-nosed snake is found at elevations from below sea level to around 2,130 meters (6,988 feet) AMSL (Goldberg 1995). It inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains, where it eats lizards, small mammals, nestling birds, amphibians, and, possibly, small snakes (CaliforniaHerps 2012). This species will burrow in sandy loose soils (CaliforniaHerps 2012).

The coast patch-nosed snake is presumed to be declining in coastal areas due to development and loss of habitat, but the abundance and distribution of this species has not been extensively studied (CaliforniaHerps 2012).

One coast patch-nosed snake was recorded on July 11, 2012, in the herpetological array in the central portion of the Preserve. Another coast patch-nosed snake was observed near the same herpetological array on July 12, 2012 (Figure 12). There is generally suitable chaparral habitat for this species throughout the Preserve.

Coastal western whiptail (*Aspidoscelis tigris stejnegeri*)

County Group 2

Coastal western whiptails are found in Southern California in chaparral, woodland, and riparian areas and, within the Preserve, were found primarily in chamise chaparral or Diegan coastal scrub. This species is diurnal and forages around the base of vegetation for invertebrates, including grasshoppers, beetles, ants, and spiders, among others (Zeiner et al. 1988). Whiptails generally avoid open areas to prevent exposure to potential predation. Principal threats result from habitat fragmentation and destruction (Zeiner et al. 1988).

A total of three coastal western whiptails were captured at both herpetological array sites during the June surveys (Figure 12). High-quality suitable habitat for this species occurs within the Preserve.

Northern Red Diamond Rattlesnake (*Crotalus ruber ruber*)

California Species of Special Concern, County Group 2

The northern red diamond rattlesnake is distributed along coastal San Diego County to the eastern slopes of the mountains and north through Western Riverside County into southernmost portion of San Bernardino County. This species can be found from sea level to 900 meters (3,000 feet) AMSL in chaparral, woodland, and arid desert habitats in rocky areas and dense vegetation (Zeiner et al. 1988). The northern red diamond rattlesnake eats small mammals, including ground squirrels, wood rats, rabbits, lizards, and birds (CaliforniaHerps 2012). The northern red diamond rattlesnake is primarily nocturnal and crepuscular during periods of excessive daytime heat (CaliforniaHerps 2012). Northern red diamond rattlesnake young are live-born from July to September (CaliforniaHerps 2012).

One northern red diamond rattlesnake was identified just off-site through an incidental observation (Figure 12). Although this individual was not found within the Preserve, it is presumed that this species is found in the Preserve.

Orange-throated whiptail (*Aspidoscelis hyperythra*)

California Species of Special Concern, County Group 2, MSCP Covered Species

Orange-throated whiptail occurs in low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats (Zeiner et al. 1988). The orange-throated whiptail occurs in Orange, Riverside, and San Diego Counties; west of the crest of the Peninsular Ranges; and in southwestern San Bernardino County near Colton. This species' range extends up to 1,039 meters (3,410 feet) AMSL (Zeiner et al. 1988). Orange-throated whiptails forage on the ground and scratch through surface debris for food. Their diet consists of a variety of small arthropods, especially termites. Orange-throated whiptails likely lay eggs in loose, well-aerated soil under or near surface objects or at the base of dense shrubs (Zeiner et al. 1988).

This species is considered special-status primarily due to loss of suitable coastal sage scrub habitat throughout its range.

Within the Preserve, the orange-throated whiptail was captured at both herpetological arrays (Figure 12). This species was the most common reptile captured during herpetological array surveys. High-quality suitable habitat for orange-throated whiptail occurs within the Preserve.

San Diego Banded Gecko (*Coleonyx variegatus abbotti*)

County Group 1

The San Diego banded gecko is found in rocky areas of coastal sage scrub and chaparral in the interior of Southern California. This species is generally found west of the Peninsular ranges and south of Transverse ranges (CaliforniaHerps 2012). The other subspecies of banded gecko, desert banded gecko (*C. v. variegatus*), is found throughout the Mojave Desert. San Diego banded geckos consume insects and hibernate during the winter period (CaliforniaHerps 2012). They are generally active at night and will hide in burrows or under rocks during the day. Habitat development is the principal threat to this species.

Within the Preserve, one San Diego banded gecko was recorded during herpetological arrays in August 2012 (Figure 12). There is suitable coastal sage scrub and chaparral habitat within the Preserve, as well as rocky outcrops that typically characterize the habitat requirements for this species.

Birds

Barn owl (*Tyto alba*)

County Group 2

Barn owls are found in many open habitats, including grassland, chaparral, riparian, and developed or urban habitats (Zeiner et al. 1990a). Barn owls are residents of much of the continental United States, including California, although they are mostly absent from the Great Plains. This species will roost in barns, caves, dense trees, or other structures and hunt for small mammals on the wing or from a perch. Prey species include mice, voles, gophers, and squirrels, as well as other small birds. Barn owls in California retain their home range throughout the year and are not migratory (Zeiner et al. 1990a).

Barn owls can occur throughout the state from sea level to 1,680 meters (5,500 feet) AMSL (Zeiner et al. 1990a).

Barn owls were recorded during the evening avian point count surveys. Three individuals were observed outside the 50-meter buffer at BC-SR-2 and one individual was observed outside the 50-meter buffer at location BC-SR-1 (Figure 12). The oak woodland riparian corridors offer suitable roosting and nesting habitats for this species, as well as plenty of open habitats for foraging.

Coastal California gnatcatcher (*Polioptila californica californica*)

Federally Threatened, California Species of Special Concern, County Group 1, MSCP Covered Species

The coastal California gnatcatcher occurs in coastal Southern California and Baja California year-round, where it depends on a variety of arid scrub habitats. The coastal California gnatcatcher occurs mainly on cismontane slopes (coastal side of the mountains) in Southern California, ranging from Ventura and Northern Los Angeles Counties south through the Palos Verdes Peninsula to Orange, Riverside, San Bernardino, and San Diego Counties. Most coastal California gnatcatcher locality records are at or below an elevation of 300 meters (984 feet) AMSL (Atwood 1990), although they may occur as high as 914 meters (3,000 feet) AMSL (65 FR 63680). The coastal California gnatcatcher typically occurs in or near coastal scrub vegetation, which is composed of relatively low-growing, dry-season deciduous and succulent plants. Characteristic plants of this community include California sagebrush, various species of sage, California buckwheat, lemonadeberry, California brittlebush, and cactus (e.g., *Opuntia* spp.). Coastal California gnatcatchers glean insects and spiders from the foliage of shrubs, primarily California buckwheat and California sagebrush (Atwood 1993). The coastal California gnatcatcher has declined due to widespread destruction of its coastal scrub habitat (Atwood 1990).

The coastal California gnatcatcher was recorded during the avian point count survey. One male was heard calling once during the first survey pass of avian point count surveys in the vicinity of BC-SR-5 (Figure 12). This individual was not observed, and no pair was recorded; no nesting behavior was noted. There is suitable coastal sage scrub habitat for this species within the Preserve.

Cooper's hawk (*Accipiter cooperii*)

CDFG Watch List, County Group 1, MSCP Covered Species

The Cooper's hawk inhabits live oak, riparian deciduous, or other forest habitats near water. This species is a year-round resident of much of western and eastern United States and is migratory in its range throughout the central United States south to Mexico (Zeiner et al. 1990a). This species is a resident of California, and most of its breeding occurs in the southern Sierra Nevada foothills, the New York Mountains, Owens Valley, and throughout Southern California.

This species nests and forages near open water or in riparian vegetation. Nests are built in dense stands of trees with moderate crown depths, usually in second-growth conifer or deciduous riparian areas. Nests in deciduous trees are typically located in crotches 20 to 50 feet above the

ground; in conifers, nests are along horizontal branches or the main crotch of conifers (Zeiner et al. 1990a). Cooper's hawks primarily hunt small birds, although they will consume small mammals, reptiles, and amphibians (Zeiner et al. 1990a).

This species has been impacted due to continued use of pesticides, but population numbers have rebounded in recent years (NatureServe 2012). Loss of suitable riparian habitat may also be impacting this species, but they are known to occupy more urban habitats, as well (NatureServe 2012).

There is suitable habitat for the Cooper's hawk within the Preserve. This species was recorded during the April and June avian point count surveys at locations BC-SR-2 and BC-SR-5 (April), and BC-SR-3 and BC-SR-4 (June). On both occasions, it was observed foraging over the Preserve (Figure 12). Cooper's hawk was not observed nesting or exhibiting nesting behavior. There was an old raptor nest located in the riparian corridor located along the eastern region of the Preserve, but it was not clear which species utilized this nest.

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens)*

CDFG Watch List, County Group 1, MSCP Covered Species

Southern California rufous-crowned sparrows are found primarily in coastal sage scrub habitats in Southern California, although this species will also occupy sparse mixed chaparral or other coastal scrub habitats (Zeiner et al. 1990a). Steep and often rocky hillsides are preferred. Rufous-crowned sparrows are secretive and are frequently hidden in shrub patches or near rocky outcrops. Rufous-crowned sparrows forage on the ground for insects, spiders, seeds, and other vegetation. This species does very little migrating, although it may occasionally migrate upslope in other areas of its range (Zeiner et al. 1990a).

Like many other species that inhabit coastal scrub habitats, this species is threatened primarily by habitat loss and fragmentation. Brown-headed cowbird (*Molothrus ater*) parasitism has also been recorded for this sparrow (Zeiner et al. 1990a).

Several rufous-crowned sparrows were observed in coastal sage scrub or chaparral habitats at multiple locations within the Preserve. Southern California rufous-crowned sparrows were recorded during avian point count surveys, as well as during general biological surveys. This species was recorded at all avian point count locations (Figure 12).

Red-shouldered hawk (*Buteo Lineatus*)

County Group 1

Red-shouldered hawk inhabits low-elevation (below 1,524 meters or 5,000 feet AMSL) riparian woodlands, particularly in areas with interspersed swamps and emergent wetlands. This species is a permanent resident of much of the United States east of the Mississippi and inhabits coastal areas of the west coast (Dykstra et al. 2008). Red-shouldered hawks forage primarily along wet meadow, swamp, and emergent wetland edges for a variety of prey including mammals, snakes, lizards, amphibians, small or young birds, and large insects. They nest in dense riparian habitats near permanent water (Zeiner et al. 1990a). Red-shouldered hawks are diurnally active and yearlong residents. Breeding occurs from February through July (Zeiner et al. 1990a).

Populations of red-shouldered hawks have declined in the last two centuries, mostly due to the loss of mature, dense woodlands that are preferred habitats of this species (Dykstra et al. 2008). However, populations in the west are known to also occupy suburban areas, particularly if there are suitable woodlands located nearby.

One red-shouldered hawk was recorded as flying overhead during the first pass of the avian bird count surveys at BC-SR-2 (Figure 12). There is sufficient riparian forest for this species, and suitable trees for roosting or nesting within the Preserve. Red-shouldered hawk was not observed nesting or exhibiting nesting behavior. There was an old raptor nest located in the riparian corridor located along the eastern region of the Preserve, but it was not clear which species utilized this nest.

Turkey vulture (*Cathartes aura*)

County Group 1

Turkey vultures are found throughout Central America and the United States and are residents of much of Southern California (Kirk et al. 1998). This species typically inhabits farmland or other open areas suitable for scavenging carrion. Habitat for perching, roosting, or nesting is generally located nearby and is characterized by undisturbed forest with cliff ledges or rocky outcrops (Kirk et al. 1998). This species specializes in aerial soaring over roads, fields, and open forests in search of carrion, as it rarely eats live birds or mammals. Turkey vultures are common during the breeding season in most of California (Zeiner et al. 1990a).

Because this species feeds in pastureland or near roadsides, it is threatened by vehicular collisions, electrocution, shooting, or lead contamination from animals killed with lead bullets (Kirk et al. 1998).

Two turkey vultures were recorded during avian bird count surveys within the Preserve at BC-SR-3 and BC-SR-4 (Figure 12). There is suitable habitat in the Preserve for foraging. However, there are no suitable cliffs or rocky outcrops for roosting or perching. As such, it is presumed that turkey vultures do not reside within the Preserve.

Western bluebird (*Sialia mexicana*)

County Group 2, MSCP Covered Species

Western bluebirds are small members of the thrush family and are found throughout much of the Western United States, including California (excluding the Mojave Desert regions) and much of the Southwest through Central Mexico (Guinan et al. 2008). This species is, generally, a wintering visitor in San Diego County, although it is a resident in some areas of Central San Diego. Open forests are preferred by this species, with large trees and snags for nesting and perching. Other habitats utilized by western bluebirds include open deciduous woodlands, wooded riparian areas, grasslands, and farmlands (Guinan et al. 2008).

During winter, bluebirds consume small berries or seeds, and insects are consumed during the breeding season (Guinan et al. 2008). Most individuals forage from a perch and, to a lesser extent, feed by flycatching insects. Other techniques utilized include hovering, gleaning, or hopping (Guinan et al. 2008).

Logging and habitat destruction, including fire suppression activities, can negatively affect this species. Bluebirds are a secondary cavity nester and are, therefore, reliant on habitats that support other cavity nesters, such as woodpeckers. Snags, large living trees, and other habitat characteristics are needed to support western bluebirds; habitat loss and fragmentation reduces the amount of suitable habitat available (Guinan et al. 2008).

Western bluebirds were recorded along the northern riparian corridor when walking to conduct herpetological arrays (Figure 12). This species was not detected during focused avian point count surveys.

White-tailed kite (*Elanus leucurus*)

State Fully Protected, County Group 1

White-tailed kite is a common to uncommon year-long resident in coastal and valley lowlands up to the western Sierra Nevada foothills and southeast deserts (Small 1994; County of Riverside 2008). The white-tailed kite is commonly associated with agricultural areas (Grinnell and Miller 1986), but it also inhabits low-elevation grasslands, savannah-like habitats, open sage scrub,

meadows, wetlands, and oak woodlands, particularly in areas with a dense population of voles (Waian and Stendell 1970). Riparian areas adjacent to open space areas are typically used for nesting (County of Riverside 2008), and kites prefer dense, broad-leafed deciduous trees for nesting and roosting (Brown and Amadon 1968). They prey mostly on small mammals, with voles and other small rodents making up approximately 95% of their diet, but they occasionally take birds, insects, reptiles, and amphibians. White-tailed kites hunt in the morning and late afternoon for voles and mice, usually near farmlands.

Nests are made of piled sticks and twigs and placed near the tops of oak, willow, or other trees near marshes and foraging areas (Zeiner et al. 1990a). Peak breeding occurs from May to August and females lay three to five eggs, incubating for approximately one month (Zeiner et al. 1990a).

White-tailed kites do not generally migrate, but are sometimes nomadic and dispersive outside of the breeding season. It is common to see large communal roosts of white-tailed kites (Unitt 2004).

One white-tailed kite was recorded during the second pass of avian point count surveys at BC-SR-3 (Figure 12). Suitable nesting habitat is located within the riparian corridors and additional suitable foraging or nesting habitat is located in the vicinity of the Preserve. This species was not observed nesting or exhibiting nesting behavior. There was an old raptor nest located in the riparian corridor along the eastern region of the Preserve, but it was not clear which species utilized this nest.

Mammals

Small Mammal Species

Dulzura pocket mouse (*Chaetodipus californicus femoralis*)

California Species of Special Concern, County Group 2

Dulzura pocket mouse inhabits coastal scrub, chamise-redshank, montane chaparral, sagebrush, grassland, valley foothill hardwood, valley foothill hardwood-conifer, and montane hardwood habitats from San Francisco Bay to Mexico (Zeiner et al. 1990b). Dulzura pocket mouse eats the seeds of annual grasses and forbs, as well as insects and leafy vegetation in brushy areas, while foraging mainly from the ground (Zeiner et al. 1990b). The pocket mouse is nocturnal and reduces activity during cold winters (Zeiner et al. 1990b). Between April and June, four offspring are usually born in the burrows pocket mice dig in soft soil (Zeiner et al. 1990b).

A total of 47 individual Dulzura pocket mice were captured during small mammal trapping in the Preserve. This species was detected during both trapping sessions at all trapping locations within the Preserve (Figure 12).

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)

California Species of Special Concern, County Group 2

The northwestern San Diego pocket mouse occurs mainly in the arid coastal and desert border areas of San Diego County, but also occurs in parts of Riverside and San Bernardino Counties, from sea level to 1,829 meters (6,000 feet) AMSL. It inhabits coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland, usually in sandy herbaceous areas with rocks or coarse gravel (Zeiner et al. 1990b). The northwestern San Diego pocket mouse feeds mostly on the seeds of forbs, grasses, and shrubs, but also eats some insects. Northwestern San Diego pocket mice carry seeds in cheek pouches and store them in and around their burrows (Zeiner et al. 1990b). The northwestern San Diego pocket mouse generally breeds from March to May with an average of four young per litter (Zeiner et al. 1990b).

Nineteen individual northwestern San Diego pocket mice were captured during small mammal trapping in the Preserve. This species was detected during both trapping sessions at both trapping locations (Figure 12).

San Diego desert woodrat (*Neotoma lepida intermedia*)

California Species of Special Concern, County Group 2

Desert woodrats are found in a variety of shrub and desert habitats and are primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth (Bleich 1973; Bleich and Schwartz 1975; Cameron and Rainey 1972; Thompson 1982). Desert woodrats are noted for their opportunistic and flexible behavior, using various materials, such as twigs and other debris (e.g., sticks, rocks, and dung), to build elaborate dens, or middens, which typically include several chambers for nesting and food, as well as several entrances.

Desert woodrats are primarily herbivorous, and their diet may include leaves, seeds, berries, parts of flowers, and yucca shoots (Cameron and Rainey 1972). This species is impacted by edge effects, primarily relating to increased predation from cats or other mesopredators.

Two San Diego desert woodrats were recorded during the second session of small mammal trapping, one woodrat was captured within each of the arrays (Figure 12).

Bats

Pallid bat (*Antrozous pallidus*)

California Species of Special Concern, County Group 2

The pallid bat is locally common in arid deserts (especially the Sonoran life zone) and grasslands throughout the Western United States and also occurs in shrublands, woodlands, and forests at elevations up to 2,440 meters (8,000 feet) (Hermanson and O'Shea 1983; Hall 1981). Although this species prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging, it has been observed far from such areas (Hermanson and O'Shea 1983).

Pallid bats forage for a variety of insects, including flightless arthropods picked up from the ground (e.g., scorpions and ground crickets), insects gleaned from vegetation (e.g., cicadas), insects taken in flight, and small vertebrates, such as horned lizards and pocket mice, that are taken on the ground.

Pallid bats were detected at the South bat survey station during both survey passes and at the North bat survey station only during the June survey pass (Figure 12).

Pocketed free-tailed bat (*Nyctinomops femorosaccus*)

California Species of Special Concern, County Group 2

The pocketed free-tailed bat inhabits pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Pocketed free-tailed bats roost in rock crevices, caverns, or buildings, and they feed on flying insects, especially large moths, detected by echolocation (Zeiner et al. 1990b). Pocketed free-tailed bat occur in San Diego, Riverside, and Imperial counties and are more common in Mexico. Pocketed free-tailed bats bear a single litter with one young in June and July, peaking in late June (Zeiner et al. 1990b).

Pocketed free-tailed bats were detected at the South bat survey location during both survey passes and at the North bat survey location during the June survey pass only (Figure 12).

Western mastiff bat (*Eumops perotis californicus*)

California Species of Special Concern, County Group 2

The western mastiff bat is found in the San Joaquin Valley and coastal ranges from Monterey County south through Southern California and from the coast eastward to the Colorado Desert in open, arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands,

chaparral, and desert scrub (Zeiner et al 1990b). The western mastiff bat is nocturnal and feeds while in flight on small low-flying insects (Zeiner et al. 1990b). Greater western mastiff bats typically roost alone in rock crevices, trees, on cliff faces or buildings (Zeiner et al. 1990b). Reproduction begins in spring, and one offspring is produced each year (Zeiner et al. 1990b).

Western mastiff bats were detected at the North bat survey station during both survey passes and at the South bat survey station only during the June survey pass (Figure 12).

Western red bat (*Lasiurus blossevillii*)

California Species of Special Concern, County Group 2

The western red bat occurs in California from Shasta County to the Mexican border and west of the Sierra Nevada/Cascade crest and deserts. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests (Zeiner et al. 1990b). The species feeds over a wide variety of habitats, including grasslands, shrublands, open woodlands, forests, and croplands. The western red bat is not found in desert areas. It roosts primarily in trees and, less often, shrubs in edge habitats adjacent to streams, fields, or urban areas. The western red bat prefers edges or habitat mosaics that have trees for roosting and open areas for foraging.

Western red bats were detected at the North bat survey station during the June survey pass and at the South bat survey station during the September survey pass (Figure 12).

Western yellow bat (*Lasiurus xanthinus*)

California Species of Special Concern

The western yellow bat occurs as a year-long resident in California from the Los Angeles and San Bernardino Counties south to the Mexican border, primarily below elevations of 600 meters (2,000 feet) (Zeiner et al. 1990b). Habitats that this species occupies include valley foothill riparian, desert riparian, desert wash, and palm oasis (Zeiner et al. 1990b).

Western yellow bats were detected at both North and South survey locations during the September survey pass (Figure 12).

Western small-footed myotis (*Myotis ciliolabrum*)

County Group 2

Western small-footed myotis is found from Coastal California south of Contra Costa County to the Mexican border and occurs throughout the Central Valley, slopes of the Sierra Nevadas,

and desert habitats (Zeiner et al. 1990b). Arid habitats are generally preferred by this species, including brushy uplands near water sources. The western small-footed myotis has been observed to drink water soon after emerging from roosting areas at dusk. Caves, buildings, mines, bridges, and other crevices are frequent roosting areas and may be occupied by individuals or a larger group (Zeiner et al. 1990b).

Western small-footed myotis were detected at both North and South survey locations during both survey passes (Figure 12).

Yuma myotis (*Myotis yumanensis*)

County Group 2

Yuma myotis occurs throughout California but is uncommon in the Mojave and Colorado desert regions, except the mountain ranges bordering the Colorado River Valley. They can be found in many habitat types but prefer open forests and woodlands with sources of water they can forage over (Zeiner et al. 1990b). Yuma myotis ranges from sea level to 3,353 meters (11,000 feet) AMSL but is generally found below 2,438 meters (8,000 feet) (Zeiner et al. 1990b). Yuma myotis roosts in groups of several thousand individuals in caves, buildings, mines, and under bridges (Zeiner et al. 1990b). Reproduction for Yuma myotis begins in the fall, and a single litter of one young is born sometime between May and June (Zeiner et al. 1990b).

Yuma myotis were detected at both North and South survey locations during both survey passes (Figure 12).

Large Mammal Species

Mule deer (*Odocoileus hemionus*)

County Group 2, MSCP Covered Species

Mule deer occur throughout California and much of the Western United States and Great Plains, north into Canada, and south to the southern end of the Mexican Plateau. Mule deer inhabit a broad range of habitats, including agricultural and suburban areas, desert, woodlands, forests, grassland, herbaceous vegetation communities, savanna, shrubland, and chaparral. Mule deer are herbivorous and browse on a variety of woody plants, grasses, and forbs (NatureServe 2012). Mating typically peaks late November to mid-December, and births occur from May to August (NatureServe 2012).

Although this species is not considered special-status or declining in its range, mule deer is covered under the MSCP, because it is San Diego County's only large herbivore, and it performs important ecosystem functions. This species also has aesthetic and intrinsic conservation values.

Mule deer were observed on the western wildlife camera installed within the Preserve (Figure 12). Mule deer tracks were observed throughout the Preserve, as well.

4.3.6 Special-Status Wildlife with High Potential to Occur

Based on an analysis of the elevation, soils, vegetation communities and level of disturbance of the site in conjunction with the known distribution of special-status species in the vicinity of the Preserve and the results of focused wildlife surveys, seven wildlife species have a high potential to occur on the Preserve. These species include one invertebrate, one reptile, two birds, and three mammal species.

Invertebrates

Hermes copper butterfly (*Lycaena hermes*)

County Group 1

Hermes copper butterfly is a species in the *Lycaenidae* family endemic to San Diego County and Northern Baja California (Deutschman et al. 2010). This species' range appears to be bounded by Fallbrook to the north, Ensenada to the south, and the Cuyamaca Mountains to the east, and they are not found in coastal regions (Marschalek and Klein 2010 in Deutschman et al. 2010).

This species inhabits chamise chaparral communities and is dependent upon two plant species at different stages in their lifetime. As larvae, Hermes copper depends on spiny redberry as a host plant. Eggs are laid on new-growth branches of this plant (Marschalek and Deutschman 2009 in Deutschman et al. 2010). As adults, Hermes copper nectar almost completely on California buckwheat, although individuals are commonly found in a dense matrix of California buckwheat and spiny redberry.

Hermes copper has a limited distribution and dispersal, and most of their movements are less than 50 meters and only rarely exceed 100 meters. The longest recorded flight for Hermes copper is approximately 1 kilometer (3,280 feet) (Marschalek 2004, Marschalek and Klein 2010, as cited in Deutschman et al. 2010).

Few of the biological and habitat needs of this species have been thoroughly studied (Deutschman et al. 2010), although Hermes copper is in regional decline, principally due to habitat loss and fragmentation most likely compounded by their inherent low dispersal ability. However, there is a high potential for this species to occur on-site because suitable habitat, including a matrix of spiny redberry and California buckwheat is present on the Preserve. The nearest recorded observation of Hermes copper was 5.8 kilometers (3.6 miles) from the Preserve at Loveland Reservoir (Deutschman et al. 2010).

Reptiles

Coastal rosy boa (*Lichanura trivirgata roseofusca*)

County Group 2

The coastal rosy boa occurs at elevations ranging from sea level to 1,370 meters (5,000 feet) AMSL in the Peninsular and Transverse mountain ranges. Within its range in Southern California, the coastal rosy boa is absent only from the southeastern corner of California around the Salton Sea and the western and southern portions of Imperial County (Zeiner et al. 1988). The coastal rosy boa inhabits rocky shrubland and desert habitats (Stebbins 2003). Rosy boas are active between April and September (Holland and Goodman 1998). Individuals may aestivate in the hottest months and hibernate in the coolest months of the year, remaining inactive in burrows or under surface debris (NatureServe 2012).

The coastal rosy boa preys on small mammals (e.g., pocket mice and young woodrats), reptiles, amphibians, and birds (Holland and Goodman 1998; Stebbins 2003). Rosy boas eat lizards in captivity and may also do so in the wild (Zeiner et al. 1988).

Within the Preserve, there is suitable coastal sage scrub and chaparral habitat with rocky outcrops. Riparian woodland within the Preserve would also serve as suitable habitat for this species.

Birds

Bell's sage sparrow (*Amphispiza belli belli*)

CDFG Watch List, County Group 1

The special-status subspecies Bell's sage sparrow occurs as a nonmigratory resident on the western slope of the central Sierra Nevada Range and in the coastal ranges of California southward from Marin County and Trinity County, extending into north-central Baja California (County of Riverside 2008).

The sage sparrow occupies semi-open habitats with evenly spaced shrubs that are 1 to 2 meters (3.3 to 6.6 feet) high (County of Riverside 2008). For site selection, specific shrub species may be less important than overall vertical structure, habitat patchiness, and vegetation density (Wiens and Rotenberry 1981). Bell's sage sparrow is uncommon to fairly common in dry chaparral and coastal scrub along the coastal lowlands, inland valleys, and lower foothills of the mountains within its range. The Bell's sage sparrow often occupies chamise chaparral in the northern part of its range (Gaines 1988; Unitt 1984) and in coastal San Diego County (Bolger et al. 1997). Sage sparrows primarily forage on the ground, usually near or under the edges of shrubs (Zeiner et al. 1990a; County of Riverside 2008). During the breeding season, the species consumes adult and larval insects, spiders, seeds, small fruits, and succulent vegetation (County of Riverside 2008).

The main threat to Bell's sage sparrow is the loss and fragmentation of appropriate shrub habitat. Like other species, it has lost suitable habitat due to urbanization and agricultural conversion, especially in Southern California (County of Riverside 2008). Fragmentation of shrubland habitats, whether by wildfire, shrub die-off, or human-caused disturbance, significantly affects Bell's sage sparrows. This species is more likely to remain in an area that has high shrub cover, low disturbance, large patch sizes, and high within-site spatial similarity.

There is suitable dry chaparral and coastal scrub habitat within the Preserve for Bell's sage sparrow.

Yellow warbler (*Dendroica petechia brewsteri*)

California Species of Special Concern, County Group 2

The yellow warbler (*Dendroica petechia brewsteri*) is widely distributed, with a breeding range from northern Alaska eastward to Newfoundland and southward to northern Baja California and Georgia. In California, it is a migrant and summer resident (Heath 2008). It breeds in riparian woodlands southward from the northern border of California, generally west of the Sierra Nevada to the coastal slopes of Southern California, and from coastal and desert lowlands up to 2,700 meters (8,860 feet) AMSL in the Sierra Nevada and other montane chaparral and forest habitats (Lowther et al. 1999; Grinnell and Miller 1986).

The yellow warbler usually nests in wet, deciduous thickets, especially those dominated by willows (*Salix* spp.), and in disturbed and early successional habitats (Lowther et al. 1999). In Southern California, it nests in lowland and foothill riparian woodlands dominated by cottonwoods (*Populus* spp.), alders (*Alnus* spp.), or willows and other small trees and shrubs typical of low, open-canopy riparian woodland (Garrett and Dunn 1981).

The yellow warbler forages for insects and spiders in the upper canopy of deciduous trees and shrubs and occasionally hawks insects from the air or eats berries (Bent 1938; Ehrlich et al. 1988). Foraging typically occurs between 0.3 and 16.8 meters (1 to 55 feet) above the ground at the top of vegetation.

There is suitable riparian habitat within the Preserve to support this species during the summer months.

Mammals

Mountain lion (*Puma* [=*Felis*] *concolor*)

County Group 2, MSCP Covered Species

Mountain lions range throughout most of California. In general, they occupy areas wherever deer or bighorn sheep are present. The most suitable mountain lion habitats include foothills and mountains. Although deer are their main food source, mountain lions have also been known to take livestock and pets (CDFG 2007).

The Preserve is located within a known wildlife movement corridor and suitable habitat for this species occurs throughout the Preserve.

Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*)

California Species of Special Concern, County Group 2

The pallid San Diego pocket mouse is commonly found in sandy herbaceous areas and occurs in the San Diego, Riverside, and San Bernardino Counties (Zeiner et al. 1990b). Typical habitats include chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland. This species commonly consumes the seeds of forbs, grasses, and shrubs, and research has indicated that grass seeds are preferred (Zeiner et al. 1990b). Seeds are placed in cheek pouches and brought back to the burrow for storage. Friable soil is needed to allow burrowing.

There is suitable chaparral habitat on site for this species, including friable soils. Although this species was not recorded during the 2012 small mammal trapping efforts, there is potential that this species occurs in the Preserve.

Townsend's big-eared bat (*Corynorhinus townsendii*)

California Species of Special Concern, County Group 2

Townsend's big-eared bat occurs throughout California, but little is known about its range, and it is currently considered uncommon in California. This species is insectivorous and primarily consumes small moths, although beetles and other soft-bodied insects are consumed, as well (Zeiner et al. 1990b). Townsend's big-eared bat forages using echolocation and will also glean insects from foliage. Mesic habitats and habitat edges are preferred. Roosting sites are typically man-made structures that house fewer than 100 individuals (Zeiner et al. 1990b).

This species was considered for coverage under the MSCP, but was not included due to a lack of sufficient data on species' distribution and life history (City of San Diego 1998). There is potential for this species to occur within the Preserve, as there are suitable mesic habitats for foraging, and nearby residential areas may provide suitable roosting sites.

4.3.7 Invasive Species

Four brown-headed cowbird individuals were detected at BC-SR-1 on May 24, 2012. This species is a brood parasite that adversely affects native passerine populations, such as California gnatcatcher, common yellowthroat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), and hooded oriole (*Icterus cucullatus*) (Unitt 2004).

4.4 Wildlife Movement

The Preserve is located within a biological linkage (Linkage I) identified by the MSCP, which connects the El Capitan Reservoir and Cleveland National Forest with open space areas in south-central San Diego County, such as the San Diego National Wildlife Refuge. This corridor is somewhat fragmented given the development pressures of this region, particularly from the north and west. Specifically, urban and agricultural development borders this corridor in some areas, which constricts wildlife movement.

The Preserve is bordered to the north and east by Mountain View Road, a main thoroughfare for the Crest, Harbison Canyon, and Dehesa communities. There are no wildlife culverts or other wildlife crossings in place on either road that bounds the Preserve, Mountain View Road, or Harbison Canyon Road, which most likely functions to limit some wildlife crossing into adjacent open areas. Although these roads certainly serve as barriers to movement, the presence of a two-lane road is not expected to impede large and medium wildlife movement out of the Preserve through open space areas and low-density residential to the north, northeast, south, and east. These roads are not highly traveled by vehicles, are not very wide, and offer sufficient cover.

There was observation of one deer crossing Harbison Canyon Road to the east during the 2012 surveys. These roads are expected to be more of a barrier to small mammal species through direct mortality and indirect barrier effects to species that are behaviorally sensitive to roads.

It is presumed that wildlife also accesses the Preserve through the west and southwest, as only residential roads are found in that region. Wildlife camera data, track and scat observations, and visual observations of mule deer, bobcat, and coyote indicate that the Preserve is utilized by wildlife, and that access is provided through existing adjacent open-space areas.

5.0 CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

Surveys conducted in 2012 documented 7 vegetation alliances, associations, or semi-natural stands, according to VCM classification, and 162 plant and 115 wildlife species were observed or detected within the Preserve during surveys, including 34 invertebrates, 1 amphibian, 10 reptiles, 43 birds, and 27 mammals. This list includes 29 special-status species (four plant species and 25 wildlife species), of which seven are covered under the MSCP SAP.

This section provides resource-specific conclusions and management recommendations for each vegetation alliance, association, or semi-natural stand and taxonomic group assessed during the 2012 survey effort. These recommendations are based on the results of the baseline biological diversity surveys and the management and monitoring guidelines and conservation goals provided in the MSCP SAP Framework Management Plan (FMP) (County of San Diego 2008). The FMP includes plan-wide stewardship and management guidelines; habitat- and species-specific management guidelines; and monitoring guidelines, as well as specific conservation goals for each of the three planning segments identified in the MSCP SAP. The Preserve is located within the Metro-Jamul-Lakeside subarea. Specific biological resources management concerns for the subarea include human development adjacent to sensitive habitats or linkages, off-road vehicle activity, dumping, or other adverse human disturbances; habitat restoration; and invasion of non-native plants and animals.

5.1 Vegetation Communities/Habitats

The Preserve consists of seven vegetation alliances, associations, or semi-natural stands including riparian habitats, coastal sage scrub, and chaparral. As part of the Metro-Jamul-Lakeside subarea, the FMP conservation goals for the Preserve include conserving a network of canyons, ridges, river valleys, and slopes for wildlife habitat and allowing movement. The Preserve is situated such that suitable habitat is conserved for attaining these goals.

Areas within the Preserve consist primarily of ridges and small canyons, located within a regional matrix of undisturbed land and rural development. Upland habitats within the Preserve, notably coastal sage scrub and chamise chaparral, are relatively undisturbed and will most likely not require extensive management. However, control of invasive species within these upland areas should be considered an ongoing management goal. Management for coastal scrub and chaparral habitats include fire management and invasive species control. Fire recommendations are discussed in Section 5.6, and invasive species treatment recommendations are discussed in Section 5.4.

Riparian habitat is located in two canyons within the south and central regions of the Preserve, and along the northeastern border. The riparian habitat located throughout the northeastern region of the Preserve will require more substantial and continual management, primarily because it is located adjacent to Mountain View Road. It was noted that dumping, litter, and vandalism are all concerns, particularly within the riparian community. Management for public access is discussed in Section 5.8.1.

Impacts to hydrology are also concerns in these riparian areas, as this habitat supports special-status plant species, including Engelmann oak and San Diego sagewort. Specific recommendations regarding hydrology are discussed in Section 5.8.4.

Non-native species control is recommended for the riparian areas on site. Several invasive species were documented within these areas that have potential to proliferate and spread within the riparian habitat of the Preserve. Invasive species treatment recommendations are discussed in Section 5.4.1.

Additionally, it is recommended that the County conduct ongoing habitat monitoring within the Preserve to maintain an up-to-date inventory of the distribution and species composition, as well as other basic characteristics of the vegetation communities on site. Ongoing monitoring within the Preserve will identify any adverse changes in vegetation community distribution and habitat quality, such as changes from fire, invasion by non-natives, or decline of existing species, and monitoring will indicate whether modifications to current management actions are needed. According to the MSCP SAP, vegetation mapping and monitoring should be repeated at least once every five years and should be consistent with recommendations provided by the San Diego Management and Monitoring Program (SDMMP) and the Institute for Ecological Monitoring and Management (IEMM) for preserve-level vegetation monitoring.

5.2 Plants

The 2012 survey effort documented four special-status plant species within the Preserve: Engelmann oak, rush-like bristleweed, San Diego County viguiera, and San Diego sagewort. These species, as well as other special-status species with potential to occur on site, are generally threatened by development, non-native plant species, and human activity. Suppressed or fire regimes that are too active may also compromise special-status plant species that require natural fire regimes to thrive. Recommendations for the preservation of these species include the monitoring and removal of non-native plant species, future trail construction that avoids special-status plant populations, maintaining fences or other barriers to prevent unauthorized public access, and continued monitoring of known special-status plant populations. As the aforementioned species are not covered under the MSCP, there are no specific monitoring

requirements as outlined in the MSCP (City of San Diego 1998). However, if MSCP-covered species are detected on site through future monitoring efforts, the MSCP monitoring requirements should be consulted, as outlined in Table 3-5 of the MSCP (City of San Diego 1998). Additional protocols for MSCP-covered species have been outlined in the MSCP Rare Plant Monitoring Review and Revision (McEachern et al. 2007).

Future rare plant surveys should be conducted at appropriate times to monitor the known populations of special-status plant species and to maximize the detection of special-status plant species with high potential to occur on site.

Additional management strategies for special-status plant species include:

- Control of non-native plant populations (see Section 5.4.1)
- Maintain natural fire regimes within the Preserve (see Section 5.6)

5.3 Wildlife

The current survey effort documented 25 special-status wildlife species, including seven species covered under the MSCP. Species-specific measures for management and monitoring of special-status species are based on Table 3-5 of the MSCP, but management should use the best available monitoring information. Below are species-specific monitoring and management conditions for MSCP SAP Covered Species and other potentially occurring special-status species found within the Preserve.

While regional MSCP monitoring protocols are being developed, preserve-level protocols have not yet been revised or identified. DPR will follow the habitat- and species-specific monitoring requirements outlined in Table 3-5 of the MSCP (City of San Diego 1998) and USFWS wildlife monitoring protocols (USFWS 2008).

5.3.1 Invertebrates

No special-status invertebrate species were detected within the Preserve. There is a high potential for Hermes copper butterfly to occur within the Preserve. Spiny redberry , the larval host plant, and California buckwheat, the adult nectar plant, were recorded within the Preserve. The Preserve is located within the known range of this species, and the habitat is generally suitable for this species. It is recommended that populations of spiny redberry are monitored periodically for Hermes copper.

Periodic monitoring for host plants and invertebrates should be done every three to five years.

5.3.2 Herpetofauna

Amphibians

Focused surveys for amphibian species were not conducted within the Preserve, and no special-status amphibian species were detected. There is moderate to low potential for special-status amphibian species to occur within the Preserve, although management considerations should be mindful of these species, as several of them likely occur throughout the watershed. There is moderate potential for western spadefoot toad (*Spea hammondii*) to occur within the Preserve, because marginally suitable habitat for the toad exists within the Preserve.

Arroyo toad is known to occur within the Sweetwater Watershed, and USFWS-designated critical habitat is in the vicinity of the Preserve. Although there is no suitable habitat for this species within the Preserve, management actions in riparian areas could have impacts on populations located downstream. Therefore, management actions to increase the overall health of the watershed are recommended. It is recommended that periodic monitoring for these special-status species be conducted in conjunction with other wildlife surveys.

There are likely non-native bullfrogs located within the watershed and methods for control or eradication should be considered, if they are detected within riparian areas in the Preserve. Non-native plant species, such as fan palm or tree tobacco, may compromise the habitat structure of riparian areas and make them unsuitable for special-status amphibian species. Control of non-native plant and animal species are discussed further in Section 5.4.1 and Section 5.4.2, respectively.

Reptiles

Six special-status reptile species were detected within the Preserve: San Diego banded gecko, northern red diamond rattlesnake, coast patch-nosed snake, coastal western whiptail, coast horned lizard, and orange-throated whiptail.

Of these six special-status reptile species, only two are covered under the MSCP and are of concern within the Metro-Jamul-Lakeside segment: coast horned lizard and orange-throated whiptail. Management guidelines stated in the MSCP (Table 3-5, City of San Diego 1998) include reducing detrimental edge effects to both species. Edge effects are likely more of an issue within the southeastern area of the Preserve, as these areas directly abut residential development areas. Potential edge effects that could affect these species include incidental mortality on roads, mortality due to stray animals or pets, and increased incidence of non-native species. Additional measures for managing populations of coast horned lizard include maintaining populations of native ant species and discouraging Argentine ants. Again, greater management for these potential issues is anticipated in areas closer to residential development.

Non-native Argentine ants often displace native ants, an important food source for the coast horned lizard and orange-throated whiptail. The FMP suggests restriction of litter and food waste, inspection of planting stock, and education of nearby residents on measures they can take to reduce the risk and extent of invasion (Dudek 2010). Argentine ants are generally associated with a water source. It is recommended that monitoring for this invasive species be conducted within the more mesic regions of the Preserve and especially along the northern and southern borders where there is an interface with human residences that likely irrigate landscaped areas adjacent to the Preserve.

Additionally, one special-status reptile has high potential to occur within the Preserve, coastal rosy boa. It is presumed that general habitat management for orange-throated whiptails and coast horned lizards are appropriate management strategies for the coastal rosy boa. Surveys for special-status reptiles should be conducted periodically; herpetological pitfall arrays and coverboard surveys should be conducted every three years to provide updates to the species inventory. Monitoring data will allow DPR to synthesize an inventory of species from which to evaluate management strategies.

Additional management strategies recommended by Dudek for special-status herpetofauna include:

- Coordination with local landowners to control pets, mesopredators, and other species that may impact special-status herpetofauna
- Install "no trespassing" signs around the perimeter of the Preserve and perform regular security patrols
- Install signage around perimeter of Preserve to inform public of impact of reptile collection and that there are penalties for unauthorized collection
- Non-native plant control and/or removal
- Exclusion of rock outcrops or other areas known to be suitable habitat for special-status species from future trail planning
- Strategic placement of fencing or berms to deter unauthorized access (e.g., at the end of Old Mountain View Road)

5.3.3 Birds

Eight special-status bird species were detected within the Preserve, including four covered under the MSCP: Cooper's hawk, coastal California gnatcatcher, southern California rufous-crowned sparrow, and western bluebird. The additional four special-status bird species identified on site are County of San Diego Sensitive Animals: barn owl, red-shouldered hawk, turkey vulture, and white-tailed kite.

Table 3-5 of the MSCP identifies management directives for the aforementioned covered bird species that should be included in the Preserve RMP. In general, it is suggested that habitats are conserved, natural ecosystem processes are maintained, and adverse environmental effects are minimized to the greatest extent possible. For Cooper's hawk, patches of oak woodland and oak riparian forest should be preserved for nesting and foraging habitat. Management for the southern California rufous-crowned sparrow requires maintenance of dynamic processes (e.g., fire) to maintain open areas of coastal sage scrub with herbaceous components. Management directives for coastal California gnatcatcher shall include measures to reduce edge effects, minimize disturbance during the nesting period, reduce the potential for habitat degradation due to unplanned fire, and maintain or improve habitat quality, including vegetation structure. In addition, management directives include no clearing of occupied habitat within the Biological Resource Core Areas between March 1 and August 15. Finally, management directives for western bluebird focus on supporting large populations of this species throughout the MSCP.

Brown-headed cowbirds, a nest parasite, have been recorded within the Preserve. Management to minimize this threat to native bird species is outlined in greater detail in Section 5.4.2.

Additional special-status species not covered under the MSCP with a high potential to occur within the Preserve include Bell's sage sparrow and yellow warbler. Potential management strategies for Bell's sage sparrow shall focus on preserving suitable coastal sage scrub, especially open chaparral with shrubs one to two meters in height. An active fire regime that maintains this type of semi-open habitat structure is preferred.

Maintaining high quality dense riparian habitat, including willow and mulefat (*Baccharis salicifolia* ssp. *salicifolia*) within the oak woodland, will benefit the yellow warbler. Human-related impacts and non-native animal species are likely of concern for yellow warbler. Management recommendations regarding public access and non-native animal species are outlined in Section 5.8.1 and Section 5.4, respectively.

Management directives that will help support bird species within the Preserve include:

- Limit habitat management activities (e.g., controlled burns and herbicide application) during the bird breeding season (generally mid-March through August)
- Non-native plant control or removal, especially in riparian areas
- Maintain natural ecological processes (e.g., wildfires, habitat succession, and hydrologic processes)
- Coordinate with managers of adjacent conserved lands to facilitate spread of information, especially with respect to migratory birds or birds with larger home ranges (e.g., white-tailed kite)

5.3.4 Mammals

Ten special-status mammal species were detected within the Preserve, and only one species, mule deer, is covered under the MSCP. There is a high potential for three additional special-status species to occur on site: pallid San Diego pocket mouse, Townsend's big-eared bat, and mountain lion. Mountain lion is an MSCP Covered Species.

Special-status mammal species and species with a high potential to occur, would benefit from management actions for coastal sage scrub, chaparral, and grassland habitats as discussed in Section 5.1. Monitoring of wildlife corridors will be done on a regional scale rather than individual preserve level.

Management actions for mule deer, as outlined in Table 3-5 of the MSCP, prioritize maintaining ecosystem function and processes within preserves. Core and linkage areas in the preserve system shall be monitored to allow for adaptive management. Camera stations utilized during the 2012 biological inventory surveys should be utilized for monitoring purposes. The Preserve is located in the vicinity of other conserved lands, including Crestridge Ecological Reserve to the west and conserved open space to the north (See Figure 3b). As such, management of the Preserve should incorporate regional management to support existing biological functions and coordination with managers of adjacent conserved lands and wildlife corridors to ensure that the flow of wildlife is supported.

5.3.5 Critical Habitat

The Preserve does not contain USFWS-designated critical habitats. The surrounding area contains critical habitats for arroyo toad, coastal California gnatcatcher, San Diego thornmint (*Acanthomintha ilicifolia*), San Diego ambrosia (*Ambrosia pumila*), and willowy monardella (*Monardella viminea*). Of these species, only gnatcatcher is found within the Preserve. There is low potential for San Diego thornmint and willowy monardella to occur within the Preserve. It is unlikely that arroyo toad would be found within the Preserve, but it is known to occur throughout the watershed.

5.4 Non-Native Invasive Species Removal and Control

As part of the Metro-Lakeside-Jamul segment of the MSCP SAP, one of the FMP conservation goals for the Preserve is the removal of invasive, non-native species (e.g., *Tamarix*, brown-headed cowbirds, American bullfrog (*Lithobates catesbeianus*).), etc.) to enhance habitat quality.

5.4.1 Plants

Twenty-nine non-native plant species were identified within the Preserve and 18 species have been identified and mapped as target species in need of removal and control (Table 14). Species ranked as high priority are recommended for control as soon as possible; species ranked as moderate priority are recommended for control as soon as high-priority species are under control; and species ranked as low priority are recommended for control after high and moderate priority species are under control.

Table 14
Removal Priority of Target Invasive Non-Native Species

Common Name	Scientific Name	Removal Priority
Pampas grass	*Cortaderia selloana*	High
Red river gum	*Eucalyptus camaldulensis*	High
Canary Island date palm	*Phoenix canariensis*	High
Saltcedar	*Tamarix ramosissima*	High
Washington fan palm	*Washingtonia robusta*	High
Tree of heaven	*Ailanthus altissima*	Moderate
Rose Natal grass	*Melinis repens* ssp. *repens*	Moderate
Tree tobacco	*Nicotiana glauca*	Moderate
Crimson fountain grass	*Pennisetum setaceum*	Moderate
Peruvian peppertree	*Schinus molle*	Moderate
Silver wattle	*Acacia dealbata*	Low
Slender oat	*Avena barbata*	Low
Black mustard	*Brassica nigra*	Low
Italian plumeless thistle	*Carduus pycnocephalus* ssp. *pycnocephalus*	Low
Maltese star thistle	*Centaurea melitensis*	Low
Bull thistle	*Cirsium vulgare*	Low
Crown daisy	*Glebionis* [=*Chrysanthemum*] *coronaria*	Low
Shortpod mustard	*Hirschfeldia incana*	Low

Species prioritized for removal are those species generally found within the oak woodland riparian corridor, a sensitive habitat prioritized for the Metro-Lakeside-Jamul segment. These species include Pampas grass, red river gum, Canary Island date palm, Washington fan palm, and saltcedar.

Recommended removal methodologies include manual removal, mechanical removal, herbicides, and cut and daub. However, the appropriate removal methodology should ultimately be determined with consideration of many variables, including time of year, severity of infestation, presence of sensitive species, the degree of intermixing of invasive species with sensitive native habitats, access, and proximity to surface water. The U.S. Army Corps of

Engineers (ACOE) and CDFG will most likely need to be consulted regarding potential permitting requirements if invasive removal using machinery or heavy equipment (e.g., for removal of large palm trees) will occur in waterways or wetlands under their jurisdiction.

Remaining non-native species, such as bromes or smooth cat's-ear, are not prioritized for removal, but should be included as species to monitor and control as components of general habitat management. These species are generally spread throughout the Preserve and management for these species would most likely not be cost-effective or successful. However, some methods, such as periodic controlled burns (e.g. every 10–20 years) (Ainsworth and Alan 1995), may help control non-native species and make habitat more suitable for sensitive plant and animal species.

5.4.2 Wildlife

Brown-headed cowbirds were detected within the Preserve. This species is a wildlife management concern within the region, because it poses a threat to common and sensitive passerines within the Preserve, including yellow warbler, coastal California gnatcatcher, hooded oriole, wrentit, and other primarily insectivorous passerines (Unitt 2004). Although only four brown-headed cowbirds were observed during the 2012 avian point count surveys, the data may not accurately reflect the level of cowbird parasitism. Gathering additional information regarding the distribution and abundance of brown-headed cowbirds on site during the breeding season (April through July) is recommended to understand the extent of breeding activity and the magnitude to which native species may be impacted.

It is recommended that the DPR monitor brown-headed cowbird populations within the Preserve to determine whether substantial action is needed. If nest parasitism is determined to be at a level at which action is necessary, possible control methods include trapping adults using modified Australian crow traps or removing eggs from host nests (County of San Diego 2009b).

Non-native Argentine ants often displace native ants, an important food source for the coast horned lizard, which was found in the Preserve. Argentine ants were not recorded within the Preserve during the 2012 surveys, although there is potential for this species to become established. Measures to reduce the risk and extent of invasion include restricting litter and food waste if the Preserve is open to the public, inspecting planting stock if active restoration occurs on site, and educating nearby residents about Argentine ants (Dudek 2010). Argentine ants are generally associated with a water source. It is recommended that monitoring for this invasive species be conducted along the riparian corridor and within other mesic portions of the Preserve, as well as around habitat edges.

No amphibian surveys were done within the Preserve, but it is possible that American bullfrogs are found within the riparian corridor on site. Native to the Eastern United States, the bullfrog was introduced to California and is now widespread and common in the state. The bullfrog is the largest frog in California and preys on, or competes for food and space with, native amphibians, such as the Pacific treefrog or arroyo toad. Occurrence of bullfrogs may potentially negatively affect native amphibian species and would hinder colonization of special-status amphibian species within the Preserve.

In the event that bullfrogs are found on site, efforts to eradicate and control bullfrogs would need to be undertaken on the watershed level, as source and satellite bullfrog populations likely occur throughout the Sweetwater River. This will require cooperation between the DPR and managers of other open space areas within the watershed to attempt to eradicate this species.

Finally, while not considered to be invasive species, stray or pet dogs and cats most likely wander throughout the Preserve, since it is located in the vicinity of homes and rural development. These animals were not observed to run through native habitat, but there is always a risk. Dogs do not kill nearly as many native species as pet cats do; however, they do stress native species and have the potential to kill. Cats kill native wildlife, particularly bird and lizard species. As such, an awareness program should be started with local homeowners to encourage them to keep animals indoors and not let them into the Preserve. If adverse effects from pets or stray animals become increasingly pervasive within the Preserve, additional control methods, such as trapping, should be considered.

5.5 Restoration Opportunities

The Preserve is generally composed of high-quality native vegetation communities within upland areas and moderately disturbed vegetation within the riparian corridor. Restoration opportunities could include invasive non-native plant species control and passive restoration, particularly in the riparian corridors. The targeted species for invasive plant species control were identified and prioritized in Table 14. The quantity of plants that are considered high priority for removal is relatively low, and complete control is feasible. However, these high priority species, including pampas grass, red river gum, Canary Island date palm, saltcedar, and Washington fan palm, will likely continue to invade the Preserve and continued invasive species management may be required.

There is one small patch of non-native annual grassland mapped in the Preserve in the northeast that could be targeted for habitat restoration. Further, there are two locations where active weed management and potentially planting and/or seed application would be beneficial. These two areas include a large polygon at the southern boundary, which contains substantial quantities of shortpod mustard, Maltese star thistle, and non-native annual

grasses, and a small polygon at the eastern edge of the Preserve, which contains substantial quantities of shortpod and black mustards. In all cases, active restoration, including planting a palette of coastal scrub species, would be appropriate.

Additional restoration opportunities within the Preserve could focus on enhancing habitat for Hermes copper butterfly. This would include planting spiny redberry and California buckwheat within close proximity (i.e., less than 10 feet apart) in suitable areas within the Preserve.

5.6 Fire Management

The Preserve is dominated by chamise chaparral and California sagebrush associations, with areas of oak woodland located along riparian corridors. Upland habitats are likely vulnerable to frequent burns, and the most recent wildfire burned almost the entire Preserve in 2003.

While riparian forest habitats are not typically susceptible to annual burning, grass cover can burn yearly (Minnich and Scott 2005). Riparian forests tend to limit ground fuel accumulation with age. Canopy closure serves to "shade out" understory plants, resulting in mature riparian forests characterized by a dense canopy layer and an understory consisting primarily of leaf and twig litter and downed woody debris. Canopy closure also reduces habitat suitability for certain rare species, such as the arroyo toad. Edges of riparian forest along ecotones or roadways often include shrub or grass understories, creating ladder fuels that allow the potential for canopy fire spread. The primary concern for vegetation type conversion and increased fire hazard in the Preserve is the presence and encroachment of non-native/exotic plants into open space areas. This condition has increased the overall fuel load and likelihood for higher intensity fire.

Dudek is preparing a Vegetation Management Plan for the Preserve that will include a short-term tactical fire suppression plan and long-term strategic vegetation management plan, which considers strategic fire prevention activities, fire suppression with regard to fire effects on habitat, and post-fire monitoring and rehabilitation. Fuel management recommendations include prescriptions specific to the high-value vegetation resources present on site (i.e., coast live oak woodland and coastal sage scrub), based on a combination of prevention practices including grazing, mowing, herbicide application, prescribed fire, thinning, and fuel break creation. Management recommendations that would complement fuel reduction practices are also identified, including maintaining and delineating fuel modification zones, providing emergency fire access, promoting data sharing, controlling illegal access, increasing public education, reducing ignition, managing fuels, and suppressing fires.

5.7 Wildlife Linkages and Corridors

Wildlife is expected to move freely within the Preserve given that it is relatively open, and the entire area is accessible to medium and large mammals. Important wildlife movement trends through this area are the regional southwest–northeast movement of medium and large wildlife through canyons and across ridgelines north to open space owned by the Endangered Habitats League and west towards Crestridge Ecological Reserve.

The riparian corridor along the northern border of the Preserve facilitates the movement of species south through Harbison Canyon and elsewhere in the Sweetwater Watershed. The MSCP FMP does not identify target species for corridor use, although management for use by coastal California gnatcatchers, mountain lion, and mule deer should be considered. As gnatcatcher do not commonly occur in this area, it is suggested that corridors for this species' dispersal are researched, lest the Preserve become a population sink. Corridor usage by mammals will be performed at a regional scale and not at an individual preserve level.

Additionally, it is presumed that wildlife disperse downstream from the Preserve throughout riparian habitats in Harbison Canyon. Since residential development is found in the immediate vicinity of the Preserve, this may limit species' dispersal potential. Methods to circumvent this dispersal barrier should be investigated, such as native species cultivation and trash or debris removal from the riparian habitat on site.

5.8 Additional Management Recommendations

5.8.1 Public Access

Currently, public access is not being considered within the Preserve. This will allow the Preserve to function as an undisturbed preserve without the risks associated with human use of open-space areas, such as wildlife collection, habitat trampling, and illegal access.

There is currently limited access for DPR management activities. Access to the Preserve is primarily from Old Mountain View Road. Other access points include an unmaintained road at Mountain View Road and an access point at the end of Kelly Drive. It is recommended that pipe gates or berms be installed at these entrance points to allow controlled access for DPR management and restrict unauthorized access. In general, access to the exterior of the Preserve is allowed through existing residential roads, but access to the interior is extremely limited. There are no roads or access areas in the southern portion of the Preserve.

Unauthorized human access within the riparian corridor may be a potential issue. It was noted that several people were photographed on the wildlife camera located on the dam crossing. Trash

and other debris were recorded within the corridor, as well. However, no substantial impacts to hydrology were noted; although, if left uncontrolled, the existing impacts may become a larger issue. It is recommended that the debris and trash found within the northern riparian corridor be removed. The physical presence of on-site DPR staff may discourage illegal trespass, as well. There is currently no fencing surrounding the Preserve, and installation of fencing or other means to prevent access (e.g., boulders or poison oak), particularly at strategic locations, such as at the end of residential streets, may discourage further illegal trespass.

5.8.2 Hydrological Management

The MSCP SAP FMP does not explicitly address hydrologic management within the Metro-Lakeside-Jamul segment. However, the Preserve is located in the Sweetwater Watershed, which has been identified for conservation within the MSCP SAP. Management considerations include the protection of oak riparian habitats from threats, such as unauthorized public disturbance or non-native plant and animal species (County of San Diego 1997). Minimizing unauthorized public disturbance is discussed in Section 5.8.1, and non-native plant and wildlife species are discussed in Section 5.4. Aboveground hydrology was recorded during the 2012 surveys only in the southern-most riparian corridor on site.

Most hydrologic threats (e.g., pollution and non-native species) are best addressed at the watershed level. Since the Preserve includes a very small portion of the watershed, there are limited site-specific activities that can be done to control pollution or hydrologic changes that would impact riparian habitat. Within the Preserve, maintenance of riparian cover along creek banks is the surest method of minimizing erosion and maximizing potential for nutrient transformation and pollutant removal.

In conjunction with the habitat monitoring described in Section 5.1, a visual assessment of channel conditions should be conducted. Where channel conditions are considered poor (e.g., unstable banks), follow-up surveys should be conducted to determine if management actions are necessary.

INTENTIONALLY LEFT BLANK

6.0 REFERENCES

65 FR 63680. Final rule: "Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for the Coastal California Gnatcatcher." October 24, 2000.

Ainsworth, J. and T. Alan. 1995. Natural History of Fire and Flood Cycles." Prepared for the California Coastal Commission. (presentation, Post-fire Hazard Assessment Planning and Mitigation Workshop at the University of California, Santa Barbara, CA, August 18, 1995). Accessed online November 2012. http://www.coastal.ca.gov/fire/ucsbfire.html.

AOU (American Ornithologists' Union). 2012. "Check-List of North American Birds: List of the 2,078 Bird Species Known From the AOU Check-list Area." Accessed August 2012. http://www.aou.org/checklist/north/full.php.

Atwood, J.L. 1990. *Status Review of the California Gnatcatcher (*Polioptila californica*)*. Manomet, Massachusetts: Manomet Bird Observatory.

Atwood, J.L. 1993. "California Gnatcatchers and Coastal Sage Scrub: The Biological Basis for Endangered Species Listing." In *Interface between Ecology and Land Development in California,* edited by J.E. Keeley, 149–169. Los Angeles, California: Southern California Academy of Sciences.

Bent, A.C. 1938. *Life Histories of North American Birds of Prey.* Part 2. U.S. National Museum Bulletin 170.

Bing. 2012. http://www.bing.com/maps/

Bleich, V.C. 1973. "Ecology of Rodents at the United States Naval Weapons Station; Seal Beach, Fallbrook Annex, San Diego County, California." Master's thesis: California State University, Long Beach.

Bleich, V.C. and O.A. Schwartz. 1975. "Observations on the Home Range of the Desert Woodrat." *Journal of Mammalogy* 56:518–519.

Bolger D.T., T.A. Scott, and J.T. Rotenberry. 1997. "Breeding Bird Abundance in an Urbanized Landscape in Coastal Southern California." *Conservation Biology* 11:406–421.

Brown, L. and D. Amadon. 1968. *Eagles, Hawks and Falcons of the World*. 2 Vols. London, United Kingdom: Country Life Books.

CaliforniaHerps. 2012. "California Reptiles and Amphibians." Accessed August 2012. http://www.californiaherps.com/index.html.

Cal-IPC (California Invasive Plant Council). 2012. "California Invasive Plant Inventory Database." Berkley, California: California Invasive Plant Council. Accessed April 2012. http://www.cal-ipc.org/ip/inventory/weedlist.php.

Cameron, G.N. and D.G. Rainey. 1972. "Habitat Utilization by Neotoma lepida in the Mojave Desert." *Journal of Mammalogy* 53:251–266.

CDFG (California Department of Fish and Game). 2000. *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities*. December 9, 1983. Revised May 8, 2000. http://www.slocounty.ca.gov/Assets/PL/environmental/CDFG_botanical_survey_guidelines.pdf

CDFG. 2007. "Commonly Asked Questions About Mountain Lions." Updated July 2007. Accessed August 2012. http://www.dfg.ca.gov/news/issues/lion/lion_faq.html.

CDFG. 2011a. California Natural Diversity Database (CNDDB). *Special Animals*. Biannual publication, Mmimeo. January 2011.

CDFG. 2011b. CNDDB. *State and Federally Listed Endangered and Threatened Animals of California*. Biannual publication, Mmimeo. January 2011.

CDFG. 2012a. CNDDB. Rarefind. Version 4. Computer database. Quadrangles used in query: Alpine, Dulzura, Jamul Mountain, Tule Spring, Viejas Mountain, Barrett Lake, El Cajon Mountain, San Vicente Reservoir, El Cajon.

CDFG. 2012b. CNDDB. *Special Vascular Plants, Bryophytes, and Lichens List*. Biannual publication, Mmimeo. July 2012.

CDFG. 2012c. CNDDB. *State and Federally Listed Endangered and Threatened, and Rare Plants of California*. Biannual publication, Mmimeo. July 2012.

City of San Diego. 1998. *Final Multiple Species Conservation Program: MSCP Plan*. August. Accessed August 2012. http://www.sdcounty.ca.gov/dplu/mscp/docs/SCMSCP/FinalMSCPProgramPlan.pdf

CNPS (California Native Plant Society). 2001. "CNPS Botanical Survey Guidelines." December 9, 1983. Revised June 2, 2001. Accessed April 15, 2011. http://cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf.

CNPS. 2012. *Inventory of Rare and Endangered Plants.* Version 8-01a. Sacramento, California: CNPS. Online ed. Accessed July 2012. http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi.

County of Riverside. 2008. "Birds." The MSHCP Reference Document – Volume 2.. *Western Riverside County Multiple Species Habitat Conservation Plan*. County of Riverside Transportation and Land Management Agency (TLMA). Accessed August 2012. http://www.rctlma.org/mshcp/volume2/birds.html.

County of San Diego. 1997. *Multiple Species Conservation Program County of San Diego Subarea Plan*. October 22, 1997. Accessed October 2012. http://www.sdcounty.ca.gov/pds/mscp/docs/SCMSCP/MSCP_County_Subarea_Plan.pdf

County of San Diego. 2008. *South County Subarea MSCP Framework Management Plan*. Accessed August 2012. http://www.sdcounty.ca.gov/dplu/mscp/docs/SCMSCP/Framework_Mgmt_Plan.pdf

County of San Diego. 2009a. *County of San Diego rare species list*.

County of San Diego. 2009b. *Resource Management Plan for Sycamore Canyon and Goodan Ranch Preserves San Diego County.* June 2009. Accessed online August 2012. http://www.sdcounty.ca.gov/reusable_components/images/parks/doc/Sycamore_RMP_Final_6-30-09_Clean.pdf

County of San Diego. 2010a. *Guidelines for Determining Significance and Report Format and Content Requirements*. Biological Resources. Fourth Revision. September 15, 2010. Accessed August 2012. http://www.co.sandiego.ca.us/dplu/docs/Biological_Report_Format.pdf.

County of San Diego. 2010b. Attachment B: *County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*)*. County of San Diego Report Format and Content Requirements: Biological Resources. Pp. 73-77.Crother, B.I. 2008. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding*. 6th ed. Herpetological Circular No. 37. Edited by J.J. Moriarty. Shoreview, Minnesota: Society for the Study of Amphibians and Reptiles.

Deutschman, D.H., M.E. Berres, D.A. Marschalek, and S.L. Strahm. 2010. *Initial evaluation of the status of Hermes copper (*Lycaena hermes*) on conserved lands in San Diego County*. October 31, 2010.

Dudek, 2010. *Final Baseline Biodiversity Survey for the Simon Preserve*. Prepared for County of San Diego Department of Parks and Recreation. San Diego, CA: Dudek. March 2010.

Dykstra, Cheryl R., Jeffrey L. Hays and Scott T. Crocoll. 2008. "Red-shouldered Hawk (Buteo lineatus)." The Birds of North America Online edited by A. Poole. Ithaca, New York: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/107doi:10.2173/bna.107

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. New York, New York: Simon and Schuster Inc.

FRAP (Fire and Resource Assessment Program). 2012. "California Department of Forestry and Fire Protection." Accessed August 2012. http://frap.cdf.ca.gov/.

Gaines, D. 1988. *Birds of Yosemite and the East Slope*. Lee Vining, California: Artemisia Press.

Garrett, K. and J. Dunn. 1981. *The Birds of Southern California: Status and Distribution.* Los Angeles, California: Audubon Society.

Goldberg, S.R. 1995. "Reproduction in the Western Patchnose Snake, *Salvadora hexalepis*, and the Mountain Patchnose Snake, *Salvadora grahamiae* (Colubridae), from Arizona." *Southwestern Naturalist* 40:119–120.

Grinnell, J. and A.H. Miller. 1986. "The Distribution of the Birds of California." *Pacific Coast Avifauna* Number 27. 1948. Reprint, Lee Vining, California: Artemisia Press, 1986.

Guinan, Judith A., Patricia A. Gowaty, and Elsie K. Eltzroth. 2008. "Western Bluebird (*Sialia mexicana*)." *The Birds of North America Online*, edited by A. Poole. Ithaca, New York: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/510doi:10.2173/bna.510.

Hall, E.R. 1981. *The Mammals of North America*. Vol 2. New York, New York: John Wiley and Sons Inc.

Heath, S.K. 2008. "Yellow Warbler (Dendroica petechia)." In *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California*, ed. W.D. Shuford and T. Gardali, 332–339. In *Studies of Western Birds 1*. Camarillo, California: Western Field Ornithologists and Sacramento, California: California Department of Fish and Game.

Hermanson, J.W. and T.J. O'Shea. 1983. "Antrozous pallidus." *Mammalian Species*, 213:1–8.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.

Holland, D.C. and R.H. Goodman. 1998. *A Guide to the Amphibians and Reptiles of MCB Camp Pendleton, San Diego County, California*. Prepared for AC/S Environmental Security Resource Management Division MCB Camp Pendleton, California. Contract M00681-94-C-0039.

Invaders. 2012. "Natalgrass (*Melinis repens*)." Citizen Scientists Combat Invasive Species. Accessed online August 2012. http://www.desertmuseum.org/invaders/invaders_natalgrass.php

Jennings, M.R., and M.P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Final report. Commissioned by the California Department of Fish and Game, Inland Fisheries Division Endangered Species Project. November 1, 1994. Accessed August 2012. http://www.dfg.ca.gov/wildlife/nongame/publications/docs/herp_ssc.pdf.

Jepson Flora Project. 2012. "Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California." Berkeley, California: University of California. Accessed August 1, 2012. http://ucjeps.berkeley.edu/interchange/I_status_1+2.html.

Kirk, David A. and Michael J. Mossman. 1998. "Turkey Vulture (Cathartes aura)." *The Birds of North America Online*, edited by A. Poole, Ed. Ithaca, New York: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/339.

Klauber, L.M. 1939. "Studies of Reptiles Life in the Arid Southwest: Part I, Night Collecting on the Desert with Ecological Statistics; Part II, Speculations on Protective Coloration and Protective Reflectivity; Part III, Notes on Some Lizards of the Southwestern United States." Bulletin of the Zoological Society of San Diego 14:1–100.

Lowther, P.E., C. Celada, N.K. Klein, C.C. Rimmer, and D.A. Spector. 1999. "Yellow Warbler (Dendroica petechia)." In *The Birds of North America*, edited by A. Poole and F. Gill. No. 454. Washington, D.C. : Cornell Laboratory of Ornithology and The Academy of Natural Sciences.

McEachern, K., B. Pavlik, J. Rebman, and R. Sutter. 2007. *Multiple Species Conservation Program (MSCP) Rare Plant Monitoring Review and Revision*. United States Geological Survey Scientific Investigations Report. 2007-5016, San Diego, California. Multiple Species Conservation Program Division.

Miller, B. W. 2001. "A method for determining relative activity of free flying bats using a new activity index for acoustic monitoring." *Acta Chiropterologica* 3:93–105.

Minnich, R.A. and Scott, T.A. 2005. "Wildland fire and the conservation of coastal sage scrub." Accessed April 28, 2005. http://ecoregion.ucr.edu/review/cssfirex.pdf.

NABA (North American Butterfly Association). 2001. *North American Butterfly Association (NABA) Checklist & English Names of North American Butterflies.* 2nd ed. Morristown, New Jersey: NABA. Accessed August 2012. http://www.naba.org/pubs/enames2.html.

NatureServe. 2012. "NatureServe Explorer: An Online Encyclopedia of Life." Version 7.1. February 2, 2009. Updated February 2012. Accessed August 2012. http://www.natureserve.org/explorer/index.htm.

NRCS (Natural Resources Conservation Service), Soil Survey Staff, United States Department of Agriculture. Official Soil Series Descriptions. Available online at http://soils.usda.gov/technical/classification/osd/index.html. Accessed August 2012.

Nussbaum, R.A., E.D. Brode, Jr., and R.M. Storm. 1983. *Amphibians and Reptiles of the Pacific Northwest*. Mostcow, Idaho: University of Idaho Press.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California." Robert F. Holland, PhD., October 1986. March 2008.

O'Farrell, M. J., B. W. Miller, and W. L. Gannon. 1999. "Qualitative identification of free-flying bats using the Anabat detector." *Journal of Mammalogy* 80:11–23.

Ogden Environmental and Environmental Services Co. Inc. 1996. *Biological Monitoring Plan for the Multiple Species Conservation Program*. Prepared for City of San Diego Metropolitan Wastewater Department, California Department of Fish and Game [Wildlife], and U.S. Fish and Wildlife Service. Received January 13, 1997.

Pianka, E.R., and W.S. Parker. 1975. "Ecology of Horned Lizards: A Review with Special Reference to *Phrynosoma platyrhinos*." *Copeia* 1975:141–162.

Project Clean Water. 2012. "San Diego County Watersheds." Accessed August 2012. http://projectcleanwater.org/

Reiser, C.H. 1994. "San Diego Ambrosia." May 1994. Accessed August 2012. http://sandiego.sierraclub.org/rareplants/008.html.

SANDAG (San Diego Association of Governments). 2011. *Vegetation Classification Manual for Western San Diego County*. First ed. February 2011. Accessed September 2012. http://www.sdmmp.com/reports_and_products/Monitoring_Reports/Vegetation_Classification/Manual/Vegetation%20Classification%20Manual%20for%20Western%20San%20Diego%20County.pdf

Small, A. 1994. *California Birds: Their Status and Distribution*. Vista, California: Ibis Publishing Company.

Stebbins, R.C. 2003. "Western Reptiles and Amphibians." *Peterson Field Guide*, 3rd ed. New York, New York: Houghton Mifflin Company.

Stebbins, R.C. 1954. *Amphibians and Reptiles of Western North America*. (Boston, Massachusetts: McGraw Hill Book Company), 537.

Thompson, S.D. 1982. "Spatial Utilization and Foraging Behavior of the Desert Woodrat, Neotoma lepida lepida." *Journal of Mammalogy* 63:570–581.

Unitt, P. 1984. *The Birds of San Diego County*. San Diego, California: San Diego Society of Natural History.

Unitt, P. 2004. *San Diego County Bird Atlas*. San Diego, California: San Diego Society of Natural History.

USDA (U.S. Department of Agriculture). 2012. "State PLANTS Checklist." Accessed August 2012. http://plants.usda.gov/dl_state.html.

USDA. 2010. *Natural Resources Conservation Service Web Soil Survey*. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.

USGS (U.S. Geological Survey). 2008. "Herpetological Monitoring Using a Pitfall Trapping Design in Southern California." http://pubs.usgs.gov/tm/tm2a5/pdf/tm2a5.pdf.

USFWS. 2008. *San Diego Multiple Species Conservation Program Animal Monitoring Protocols*. Draft. Prepared for the City of San Diego Department of City Planning and Community Investment.

USFWS. 2002. Quino checkerspot butterfly (*Euphydryas editha quino*) Survey protocol information. February 2002. http://www.fws.gov/carlsbad/TEspecies/Documents/QuinoDocs/2002%20Quino%20protocol%20complete.pdf

USFWS. 1996. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants*.

Waian, L.B. and R.C. Stendell. 1970. "The White-Tailed Kite in California with Observations of the Santa Barbara Population." *California Fish and Game* 56:188–198.

Western Institute of the Environment. 2008. "The Largest Fire in California State History." SOS Forests. Accessed September 2012. http://westinstenv.org/sosf/2008/06/28/the-largest-fire-california-state-history/.

WRCC (Western Regional Climate Center). 2012a. "Climate of California." Accessed online August 2012. http://www.wrcc.dri.edu/narratives/california/.

WRCC. 2012b. "Period of Record General Climate Summary, Poway Valley." Accessed online August 2012. http://www.wrcc.dri.edu/summary/sca.html.

Wiens, J.A. and J.T. Rotenberry. 1981. "Habitat Associations and Community Structure of Birds in Shrubsteppe Environments." *Ecological Monographs* 51:21–41.

Wilson, D.E., and D.M. Reeder, eds. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference*. 3rd ed. Baltimore, Maryland: Johns Hopkins University Press.

Zeiner, D.C., W.F. Laudenslayer, Jr., and K.E. Mayer, eds. 1988. *California's Wildlife, Volume 1: Amphibians and Reptiles*. Sacramento, California: CDFG.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990a. *California's Wildlife, Volume 2: Birds*. Sacramento, California: CDFG.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, ed. 1990b. *California's Wildlife, Volume 3: Mammals*. Sacramento, California: CDFG.

APPENDIX A

Observed Species List – Plants

APPENDIX A
Plant Species Observed

Scientific Name	Common Name	Status (Federal/State/County, CRPR) [1]
Vascular Species-Dicots		
ADOXACEAE—Muskroot Family		
Sambucus nigra ssp. *caerulea*	Blue elderberry	None/None/None
ANACARDIACEAE—Sumac or Cashew Family		
Malosma laurina	Laurel sumac	None/None/None
Rhus ovata	Sugar sumac	None/None/None
**Schinus molle*	Peruvian peppertree	None/None/None
Toxicodendron diversilobum	Pacific poison oak	None/None/None
APIACEAE—Carrot Family		
Daucus pusillus	American wild carrot	None/None/None
ASTERACEAE—Sunflower Family		
Acourtia microcephala	Sacapellote	None/None/None
Ambrosia psilostachya	Cuman ragweed	None/None/None
Artemisia californica	Coastal sagebrush	None/None/None
Artemisia douglasiana	Douglas' sagewort	None/None/None
Artemisia dracunculus	Tarragon	None/None/None
Artemisia palmeri	San Diego sagewort	None/None/List D, 4.2
Baccharis salicifolia ssp. *salicifolia*	Mulefat	None/None/None
Baccharis sarothroides	Desertbroom	None/None/None
Bahiopsis laciniata	San Diego County viguiera	None/None, List D, 4.3
Brickellia californica	California brickellbush	None/None/None
**Carduus pycnocephalus* ssp. *pycnocephalus*	Italian plumeless thistle	None/None/None
**Centaurea melitensis*	Maltese star-thistle	None/None/None
Chaenactis artemisiifolia	White pincushion	None/None/None
Chaenactis glabriuscula	Yellow pincushion	None/None/None
Cirsium occidentale var. *californicum*	Cobwebby thistle	None/None/None
**Cirsium vulgare*	Bull thistle	None/None/None
Deinandra fasciculata	Clustered tarweed	None/None/None
Erigeron canadensis	Canadian horseweed	None/None/None
Erigeron foliosus	Leafy fleabane	None/None/None
Erigeron canadensis	Canadian horseweed	None/None/None
Eriophyllum confertiflorum	Golden-yarrow	None/None/None
**Glebionis coronaria*	Crowndaisy	None/None/None
Gutierrezia californica	San Joaquin snakeweed	None/None/None
Hazardia squarrosa	Sawtooth goldenbush	None/None/None
Helianthus gracilentus	Slender sunflower	None/None/None
Heterotheca grandiflora	Telegraphweed	None/None/None

Scientific Name	Common Name	Status (Federal/State/County, CRPR) [1]
**Hypochaeris glabra*	Smooth cat's ear	None/None/None
**Lactuca serriola*	Prickly lettuce	None/None/None
**Logfia gallica*	Narrowleaf cottonrose	None/None/None
Osmadenia tenella	False rosinweed	None/None/None
Porophyllum gracile	Slender poreleaf	None/None/None
Pseudognaphalium biolettii	Two-color rabbit-tobacco	None/None/None
Pseudognaphalium californicum	Ladies' tobacco	None/None/None
Pseudognaphalium canescens	Wright's cudweed	None/None/None
Pseudognaphalium stramineum	Cottonbatting plant	None/None/None
Solidago velutina ssp. *californica*	Threenerve goldenrod	None/None/None
**Sonchus oleraceus*	Common sowthistle	None/None/None
Stephanomeria virgata	Rod wirelettuce	None/None/None
Stylocline gnaphaloides	Mountain neststraw	None/None/None
Xanthisma junceum	Rush-like bristleweed	None/None/None, 4.3
Xanthium strumarium	Cocklebur	None/None/None
BORAGINACEAE—Borage Family		
Cryptantha intermedia	Clearwater cryptantha	None/None/None
Eriodictyon crassifolium	Thickleaf yerba santa	None/None/None
Phacelia cicutaria	Caterpillar phacelia	None/None/None
Phacelia ramosissima	Branching phacelia	None/None/None
Plagiobothrys sp.	Popcornflower	None/None/None
BRASSICACEAE—Mustard Family		
**Brassica nigra*	Black mustard	None/None/None
**Hirschfeldia incana*	Shortpod mustard	None/None/None
Lepidium virginicum ssp. *menziesii*	Intermediate pepperweed	None/None/None
CAPRIFOLIACEAE—Honeysuckle Family		
Lonicera subspicata	Southern honeysuckle	None/None/None
CARYOPHYLLACEAE—Pink Family		
**Silene gallica*	Common catchfly	None/None/None
Silene laciniata	Cardinal catchfly	None/None/None
CONVOLVULACEAE—Morning-glory Family		
Calystegia macrostegia	Island false bindweed	None/None/None
Cuscuta californica	Chaparral dodder	None/None/None
CRASSULACEAE—Stonecrop Family		
Dudleya pulverulenta	Chalk dudleya	None/None/None
CUCURBITACEAE—Gourd Family		
Marah macrocarpa	Cucamonga manroot	None/None/None

Scientific Name	Common Name	Status (Federal/State/County, CRPR) [1]
ERICACEAE—Heath Family		
Arctostaphylos glauca	Bigberry manzanita	None/None/None
Xylococcus bicolor	Mission manzanita	None/None/None
EUPHORBIACEAE—Spurge Family		
Acalypha californica	California copperleaf	None/None/None
Chamaesyce albomarginata	Whitemargin sandmat	None/None/None
FABACEAE—Legume Family		
**Acacia dealbata*	Silver wattle	None/None/None
Acmispon americanus var. *americanus*	American bird's-foot trefoil	None/None/None
Acmispon glaber	Common deerweed	None/None/None
Lathyrus vestitus	Pacific pea	None/None/None
Lupinus hirsutissimus	Stinging annual lupine	None/None/None
**Melilotus indicus*	Annual yellow sweetclover	None/None/None
Vicia ludoviciana ssp. *ludoviciana*	Louisiana vetch	None/None/None
FAGACEAE—Oak Family		
Quercus ×acutidens	No common name	None/None/None
Quercus agrifolia	California live oak	None/None/None
Quercus berberidifolia	Scrub oak	None/None/None
Quercus engelmannii	Engelmann oak	None/None/List D, 4.2
GENTIANACEAE—Gentian Family		
Zeltnera venusta	Charming centaury	None/None/None
GROSSULARIACEAE—Gooseberry Family		
Ribes indecorum	Whiteflower currant	None/None/None
LAMIACEAE—Mint Family		
Salvia apiana	White sage	None/None/None
Salvia columbariae	Chia	None/None/None
Salvia mellifera	Black sage	None/None/None
Stachys bullata	California hedge nettle	None/None/None
MALVACEAE—Mallow Family		
Malacothamnus densiflorus	Yellowstem bushmallow	None/None/None
MONTIACEAE—Montia Family		
Claytonia parviflora ssp. *parviflora*	Streambank springbeauty	None/None/None
MYRSINACEAE—Myrsine Family		
**Anagallis arvensis*	Scarlet pimpernel	None/None/None
MYRTACEAE—Myrtle Family		
**Eucalyptus camaldulensis*	Red river gum	None/None/None
NYCTAGINACEAE—Four O'clock Family		
Mirabilis laevis	Desert wishbone-bush	None/None/None

Scientific Name	Common Name	Status (Federal/State/County, CRPR) [1]
ONAGRACEAE—Evening Primrose Family		
Epilobium canum	Hummingbird trumpet	None/None/None
OROBANCHACEAE—Broom-rape Family		
Cordylanthus rigidus	Stiffbranch bird's beak	None/None/None
PAEONIACEAE—Peony Family		
Paeonia californica	California peony	None/None/None
PAPAVERACEAE—Poppy Family		
Eschscholzia californica	California poppy	None/None/None
Papaver californicum	Western poppy	None/None/None
PHRYMACEAE—Lopseed Family		
Mimulus breviflorus	Shortflower monkeyflower	None/None/None
Mimulus cardinalis	Scarlet monkeyflower	None/None/None
PLANTAGINACEAE—Plantain Family		
Antirrhinum nuttallianum	Violet snapdragon	None/None/None
Collinsia heterophylla	Purple Chinese houses	None/None/None
Keckiella antirrhinoides	Snapdragon penstemon	None/None/None
Keckiella cordifolia	Heartleaf keckiella	None/None/None
Penstemon spectabilis	Showy penstemon	None/None/None
PLATANACEAE—Plane Tree, Sycamore Family		
Platanus racemosa	California sycamore	None/None/None
POLEMONIACEAE—Phlox Family		
Eriastrum sapphirinum	Sapphire woollystar	None/None/None
Navarretia hamata	Hooked pincushionplant	None/None/None
POLYGONACEAE—Buckwheat Family		
Chorizanthe fimbriata	Fringed spineflower	None/None/None
Chorizanthe staticoides	Turkish rugging	None/None/None
Eriogonum fasciculatum	Eastern Mojave buckwheat	None/None/None
Eriogonum gracile	Slender woolly buckwheat	None/None/None
Pterostegia drymarioides	Woodland pterostegia	None/None/None
Rumex californicus	Toothed willow dock	None/None/None
RANUNCULACEAE—Buttercup Family		
Clematis sp.	Clematis	None/None/None
Clematis pauciflora	rRopevine clematis	None/None/None
Delphinium parishii	Desert larkspur	None/None/None
Thalictrum fendleri	Fendler's meadow-rue	None/None/None
RHAMNACEAE—Buckthorn Family		
Ceanothus leucodermis	Chaparral whitethorn	None/None/None
Ceanothus tomentosus	Woolyleaf ceanothus	None/None/None
Rhamnus crocea	Spiny redberry	None/None/None
Rhamnus pilosa	Hollyleaf buckthorn	None/None/None

Scientific Name	Common Name	Status (Federal/State/County, CRPR) [1]
ROSACEAE—Rose Family		
Adenostoma fasciculatum	Chamise	None/None/None
Cercocarpus minutiflorus	Smooth mountain mahogany	None/None/None
Drymocallis glandulosa var. *reflexa*	Sticky cinquefoil	None/None/None
Heteromeles arbutifolia	Toyon	None/None/None
Prunus ilicifolia	Holly-leaved cherry	None/None/None
RUBIACEAE—Madder Family		
Galium angustifolium	Narrowleaf bedstraw	None/None/None
RUTACEAE—Rue Family		
Cneoridium dumosum	Bush rue	None/None/None
SALICACEAE—Willow Family		
Populus fremontii ssp. *fremontii*	Fremont cottonwood	None/None/None
Salix gooddingii	Goodding's willow	None/None/None
Salix laevigata	Red willow	None/None/None
Salix lasiolepis	Arroyo willow	None/None/None
SCROPHULARIACEAE—Figwort Family		
Scrophularia californica	California figwort	None/None/None
SIMAROUBACEAE—Quassia or Simarouba Family		
**Ailanthus altissima*	Tree of heaven	None/None/None
SOLANACEAE—Nightshade Family		
**Nicotiana glauca*	Tree tobacco	None/None/None
Solanum douglasii	Greenspot nightshade	None/None/None
TAMARICACEAE—Tamarisk Family		
**Tamarix ramosissima*	Tamarisk	None/None/None
VITACEAE—Grape Family		
Vitus girdiana	Desert wild grape	None/None/None
Vascular Species-Ferns and Fern Allies		
PTERIDACEAE—Brake Family		
Cheilanthes sp.	Lipfern	None/None/None
Pellaea andromedifolia	Coffee cliffbrake	None/None/None
Vascular Species-Gymnosperms and Gnetophytes		
PINACEAE—Pine Family		
Pinus sp.	Pine	None/None/None
Vascular Species-Moncots		
AGAVACEAE—Agave Family		
Hesperoyucca whipplei	Chaparral yucca	None/None/None
Yucca schidigera	Mojave yucca	None/None/None
ARECACEAE—Palm Family		
**Phoenix canariensis*	Canary Island date palm	None/None/None
**Washingtonia robusta*	Washington fan palm	None/None/None

Scientific Name	Common Name	Status (Federal/State/County, CRPR) [1]
CYPERACEAE—Sedge Family		
Carex spissa	San Diego sedge	None/None/None
JUNCACEAE—Rush Family		
Juncus xiphioides	Irisleaf rush	None/None/None
LILIACEAE—Lily Family		
Calochortus weedii	Weed's mariposa lily	None/None/None
POACEAE—Grass Family		
Aristida purpurea var. *purpurea*	Purple threeawn	None/None/None
**Avena barbata*	Slender oat	None/None/None
**Bromus diandrus*	Ripgut brome	None/None/None
**Bromus hordeaceus*	Soft brome	None/None/None
**Bromus madritensis*	Compact brome	None/None/None
**Cortaderia selloana*	Pampas grass	None/None/None
Elymus triticoides	Feardless wildrye	None/None/None
**Festuca myuros*	Rat-tail fescue	None/None/None
Melica imperfecta	Smallflower melicgrass	None/None/None
**Melinis repens* ssp. *repens*	Rose Natal Grass	None/None/None
Muhlenbergia microsperma	Littleseed muhly	None/None/None
Muhlenbergia rigens	Deergrass	None/None/None
**Pennisetum setaceum*	Crimson Fountain Grass	None/None/None
Stipa coronata	Giant ricegrass	None/None/None
Stipa lepida	Foothill needlegrass	None/None/None
Stipa miliacea var. *miliacea*	Smilograss	None/None/None
TYPHACEAE—Cattail Family		
Typha domingensis	Southern cattail	None/None/None
Typha latifolia	Broadleaf cattail	None/None/None

* Signifies non-native species.

[1] CRPR (California Rare Plant Rank):

- 1A Plants Presumed Extinct in California
- 1B Plants Rare, Threatened, or Endangered in California and Elsewhere
- 2 Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
- 3 Plants About Which We Need More Information - A Review List
- 4 Plants of Limited Distribution - A Watch List

Threat Ranks

- 0.1 Seriously threatened in California
- 0.2 Fairly threatened in California
- 0.3 Not very threatened in California

County Designations:

- County List A Plants rare, threatened or endangered in California and elsewhere
- County List B Plants rare, threatened or endangered in California but common elsewhere
- County List C Plants which may be rare, but need more information to determine their true rarity status
- County List D Plants of limited distribution and are uncommon, but not presently rare or endangered

APPENDIX B

Observed Species List – Wildlife

APPENDIX B
Observed Species List – Wildlife

Scientific Name	Common Name	Status (Federal/State/County, MSCP)[1]
Amphibians		
RANIDAE - True Frogs		
Pseudacris regilla	Northern Pacific treefrog	None/None/None
Reptiles		
GEKKONIDAE - Geckos		
Coleonyx variegatus abbotti	San Diego banded gecko	None/None/Group 1
IGUANIDAE - Iguanid Lizards		
Phrynosoma blainvillei ssp. *coronatum*	Coast horned lizard	None/CSC/Group 1, MSCP
Sceloporus occidentalis	Western fence lizard	None/None/None
Uta stansburiana	Common side-blotched lizard	None/None/None
SCINCIDAE - Skinks		
Plestiodon skiltonianus	Western skink	None/None/None
TEIIDAE - Whiptail Lizards		
Aspidoscelis hyperythra beldingi	Orange-throated whiptail	None/CSC/Group 2, MSCP
Aspidoscelis tigris stejnegeri	Coastal western whiptail	None/None/Group 2
ANGUIDAE - Alligator Lizards		
Elgaria multicarinata	Southern alligator lizard	None/None/None
COLUBRIDAE - Colubrid Snakes		
Salvadora hexalepis virgultea	Coast patch-nosed snake	None/CSC/Group 2
VIPERIDAE - Vipers		
Crotalus ruber ruber	Northern red diamond rattlesnake	None/CSC/Group 2
Birds		
ARDEIDAE—Herons, Bitterns, And Allies		
Ardea alba	Great egret	None/None/None
CATHARTIDAE - New World Vultures		
Cathartes aura	Turkey vulture	None/None/Group 1
ACCIPITRIDAE—Hawks, Kites, Eagles, And Allies		
Accipiter cooperii	Cooper's hawk	None/WL/Group 1, MSCP
Buteo jamaicensis	Red-tailed hawk	None/None/None
Buteo lineatus	Red-shouldered hawk	None/None/Group 1
Elanus leucurus	White-tailed kite	None/FP/Group 1
ODONTOPHORIDAE—New World Quail		
Callipepla californica	California quail	None/None/None
COLUMBIDAE - Pigeons and Doves		
Zenaida macroura	Mourning dove	None/None/None
TYTONIDAE - Barn Owl***s***		
Tyto alba	Barn owl	None/None/Group 2

APPENDIX B (Continued)

Scientific Name	Common Name	Status (Federal/State/County, MSCP)[1]
STRIGIDAE **-** Typical Owls		
Bubo virginianus	Great horned owl	None/None/None
CAPRIMULGIDAE **-** Goatsuckers		
Phalaenoptilus nuttallii	Common poorwill	None/None/None
APODIDAE **-** Swifts		
Aeronautes saxatalis	White-throated swift	None/None/None
TROCHILIDAE **-** Hummingbirds		
Archilochus alexandri	Black-chinned hummingbird	None/None/None
Calypte anna	Anna's hummingbird	None/None/None
PICIDAE*—**Woodpeckers and Allies***		
Melanerpes formicivorus	Acorn woodpecker	None/None/None
Picoides nuttallii	Nuttall's woodpecker	None/None/None
TYRANNIDAE **-** Tyrant Flycatchers		
Myiarchus cinerascens	Ash-throated flycatcher	None/None/None
Sayornis nigricans	Black phoebe	None/None/None
Tyrannus vociferans	Cassin's kingbird	None/None/None
HIRUNDINIDAE **-** Swallows		
Petrochelidon pyrrhonota	Cliff swallow	None/None/None
Stelgidopteryx serripennis	Northern rough-winged swallow	None/None/None
Tachycineta thalassina	Violet-green swallow	None/None/None
***CORVIDAE*—**Crows and Jays		
Aphelocoma californica	Western scrub-jay	None/None/None
Corvus brachyrhynchos	American crow	None/None/None
Corvus corax	Common raven	None/None/None
***AEGITHALIDAE*—**Long-Tailed Tits and Bushtits		
Psaltriparus minimus	Bushtit	None/None/None
TROGLODYTIDAE **-** Wrens		
Thryomanes bewickii	Bewick's wren	None/None/None
TURIDAE – Thrushes		
Sialia mexicana	Western bluebird	None/None/Group 2, MSCP
***POLIOPTILIDAE*—**Gnatcatchers and Gnatwrens		
Polioptila californica californica	Coastal California gnatcatcher	FT/CSC/Group 1, MSCP
***SYLVIIDAE*—**Sylviid Warblers		
Chamaea fasciata	Wrentit	None/None/None
***MIMIDAE*—**Mockingbirds and Thrashers		
Mimus polyglottos	Northern mockingbird	None/None/None
Toxostoma redivivum	California thrasher	None/None/None
PTILOGONATIDAE **-** Silky-Flycatchers		
Phainopepla nitens	Phainopepla	None/None/None

Scientific Name	Common Name	Status (Federal/State/County, MSCP)[1]
***PARULIDAE*—**Wood-Warblers		
Setophaga nigrescens	Black-throated gray warbler	None/None/None
Setophaga townsendi	Townsend's warbler	None/None/None
***EMBERIZIDAE* -** Emberizids		
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL/Group 1, MSCP
Melozone crissalis	California towhee	None/None/None
Pipilo maculatus	Spotted towhee	None/None/None
Spizella atrogularis	Black-chinned sparrow	None/None/None
***CARDINALIDAE* -** Cardinals and Allies		
Pheucticus melanocephalus	Black-headed grosbeak	None/None/None
***ICTERIDAE* -** Blackbirds		
Icterus cucullatus	Hooded oriole	None/None/None
Molothrus ater	Brown-headed cowbird	None/None/None
***FRINGILLIDAE*—**Fringilline and Cardueline Finches and Allies		
Carpodacus mexicanus	House finch	None/None/None
Spinus psaltria	Lesser goldfinch	None/None/None
Mammals		
***SORICIDAE* -** Shrews		
Notiosorex crawfordi	Crawford's gray shrew	None/None/None
***VESPERTILIONIDAE* -** Evening Bats		
Antrozous pallidus	Pallid bat	None/CSC/Group 2
Eptesicus fuscus	Big brown bat	None/None/None
Lasiurus blossevillii	Western red bat	None /CSC/Group 2
Lasiurus xanthinus	Western yellow bat	None/CSC/None
Myotis californicus	California myotis	None /None/None
Myotis ciliolabrum	Western small-footed myotis	None/None/None
Myotis yumanensis	Yuma myotis	None /None/Group 2
Parastrellus hesperus	Canyon bat	None/None/None
***MOLOSSIDAE* -** Free-Tailed Bats		
Eumops perotis californicus	Western mastiff bat	None/CSC/Group 2
Nyctinomops femorosaccus	Pocketed free-tailed bat	None/CSC/Group 2
Tadarida basiliensis	Brazilian free-tailed bat	None/None/None
***LEPORIDAE* -** Hares and Rabbits		
Sylvilagus bachmani	Brush rabbit	None/None/None
***SCIURIDAE* -** Squirrels		
Spermophilus beecheyi	California ground squirrel	None/None/None
***GEOMYIDAE* -** Pocket Gophers		
Thomomys bottae	Botta's pocket gopher	None/None/None
***HETEROMYIDAE* -** Pocket Mice and Kangaroo Rats		
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/CSC/Group 2
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	None/CSC/Group 2

Scientific Name	Common Name	Status (Federal/State/County, MSCP)[1]
Dipodomys simulans	Dulzura kangaroo rat	None/None/None
MURIDAE - Rats and Mice		
Microtus californicus	California vole	None/None/None
Neotoma lepida intermedia	San Diego desert woodrat	None/CSC/Group 2
Neotoma macrotis	Big-eared woodrat	None/None/None
Peromyscus californicus	California deermouse	None/None/None
Peromyscus eremicus	Cactus deermouse	None/None/None
CANIDAE—Wolves and Foxes		
Canis latrans	Coyote	None/None/None
MUSTELIDAE - Weasels, Skunks, and Otters		
Mephitis mephitis	Striped skunk	None/None/None
Spilogale gracilis	Western spotted skunk	None/None/None
FELIDAE - Cats		
Lynx rufus	Bobcat	None/None/None
CERVIDAE - Deers		
Odocoileus hemionus	Mule deer	None/None/Group 2, MSCP
Invertebrates - Butterflies		
HESPERIIDAE - Skippers		
Erynnis funeralis	Funereal duskywing	None/None/None
PAPILIONIDAE - Swallowtails		
Papilio zelicaon	Anise swallowtail	None/None/None
PIERIDAE - Whites and Sulfurs		
Colias eurydice	California dogface	None/None/None
Pieris sp.	White	None/None/None
RIODINIDAE - Metalmarks		
Apodemia mormo virgulti	Behr's metalmark	None/None/None
LYCAENIDAE - Blues, Hairstreaks, and Coppers		
Callophrys augustinus	Brown elfin	None/None/None
Callophrys perplexa	Perplexing hairstreak	None/None/None
Plebejus sp.	Blue	None/None/None
Plebejus acmon	Acmon blue	None/None/None
NYMPHALIDAE - Brush-Footed Butterflies		
Vanessa sp.	Lady	None/None/None
Invertebrates - Other		
Ammotrechidae sp.	Windscorpion	None/None/None
Apis mellifera	European honey bee	None/None/None
Bombus sp.	Bumble bees	None/None/None
Chilopoda sp.	Centipede	None/None/None
Eleodes armata	Armored stink beetle	None/None/None
Eleodes osculans	Wooly ground beetle	None/None/None
Family Armadillidiidae	Pill bug	None/None/None

Scientific Name	Common Name	Status (Federal/State/County, MSCP)[1]
Family Formicidae	Ants	None/None/None
Family Lycosidae	Wolf spider	None/None/None
Family Mutillidae	Velvet ant	None/None/None
Family Salticidae	Jumping spider	None/None/None
Family Tenebrionidae	Darkling ground beetle	None/None/None
Infraorder Anisoptera	Dragonfly	None/None/None
Lepisma sp.	Common silverfish	None/None/None
Order Diptera	Flies	None/None/None
Order Scorpiones	Scorpion	None/None/None
Pygonomyrex sp.	Harvester ant	None/None/None
Sphenophorus sp.	Billbug	None/None/None
Stenopelmatus fuscus	Jerusalem cricket	None/None/None
Subfamily Gryllinae	Field cricket	None/None/None
Suborder Zygoptera	Damselfly	None/None/None
Superfamily Theraphosidea	Tarantula	None/None/None
Superfamily Vespoidea	Wasp	None/None/None
Trachelas sp.	Sac spider	None/None/None

[1] Status Designations:

Federal Designations:

FT	Federally listed as Threatened

State Designations:

CSC	California Species of Special Concern
FP	California Department of Fish and Game Fully Protected Species
WL	California Department of Fish and Game Watch List Species

County Designations:

Group 1	Animals of high sensitivity (listed or specific natural history requirements)
Group 2	Animals declining, but not in immediate threat of extinction or extirpation
MSCP	Covered species under the MSCP

INTENTIONALLY LEFT BLANK

APPENDIX C

Avian Point Location Photographs

Point 1 looking west

Point 1 looking north

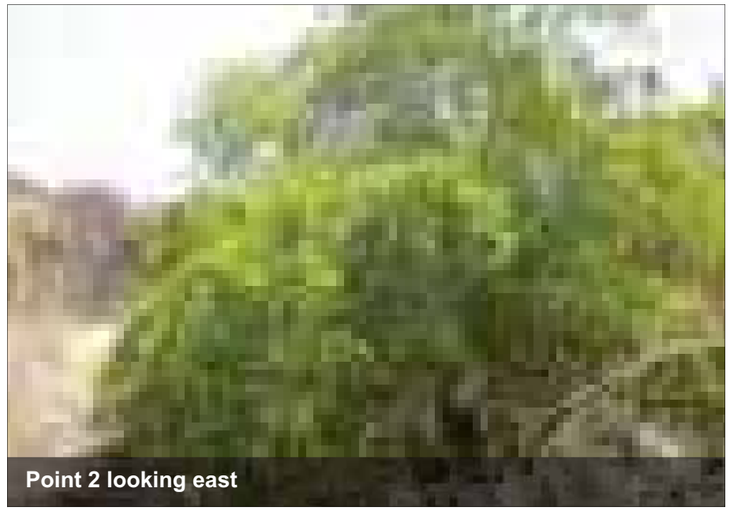
Point 1 looking south

Point 1 looking east

Point 2 looking west

Point 2 looking north

Point 2 looking south



Point 2 looking east

Point 3 looking west

Point 3 looking north

Point 3 looking south

Point 3 looking east

Point 4 looking west

Point 4 looking north

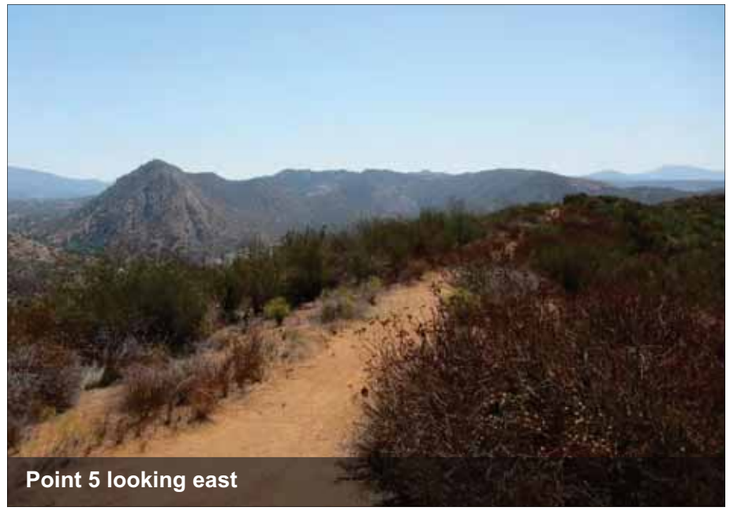
Point 4 looking south

Point 4 looking east

Point 5 looking west

Point 5 looking north

Point 5 looking south



Point 5 looking east

INTENTIONALLY LEFT BLANK

APPENDIX D

Special-Status Plant Species Detected or Potentially Occurring

APPENDIX D
Special-Status Plant Species Detected or Potentially Occurring Within Stoneridge Preserve Site Elevation 668–1,421 Feet (264 to 405 Meters)

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Carlowrightia arizonica	Acanthaceae	Arizona carlowrightia	None/None/List B/2.2	Sonoran desert scrub/sandy, granitic alluvium/deciduous shrub/March–May/285–430 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Agave shawii	Agavaceae	Shaw's agave	None/None/List B, MSCP/2.1	Coastal bluff scrub, coastal scrub/leaf succulent/September– May/10–75 meters	Not recorded in vicinity[2].	No suitable habitat; no preferred soil types included in species description. Outside elevation range.	Not expected to occur. No suitable habitat. Outside elevation range. More commonly a coastal species. Not recorded in vicinity[2]. Would likely have been detected during surveys if present.
Rhus trilobata var. *simplicifolia*	Anacardiaceae	Single-leaf basketbush	None/None/List B/2.3	Pinyon and juniper woodland/deciduous shrub/March–April/1,220–1,370 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Eryngium aristulatum var. *parishii*	Apiaceae	San Diego button-celery	FE/SE/List A, MSCP/1B.1	Coastal scrub, valley and foothill grassland, vernal pools, mesic areas/annual-perennial herb/April–June/20–620 meters	Recorded within surrounding Jamul Mountains quadrangle.	Suitable coastal scrub habitat and mesic areas on site. Within elevation range.	Moderate potential to occur. Suitable habitat and mesic areas on site. Within elevation range. Recorded in vicinity[2].
Eryngium pendletonensis	Apiaceae	Pendleton button-celery	None/None/List A/1B.1	Coastal bluff scrub, valley and foothill grassland, vernal pools; clay, vernally mesic/perennial herb/April–June/15–110 meters	Not recorded in vicinity[2].	No suitable habitat or clay soils on site. Outside elevation range.	Not expected to occur. No suitable habitat or soils. Outside elevation range. Not recorded in the vicinity[2].
Perideridia gairdneri ssp. *gairdneri*	Apiaceae	Gairdener's yampah	None/None/List D/4.2	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools; vernally mesic/perennial herb/June–October/0–610 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and mesic areas; although no vernal pools. Within elevation range.	Low potential to occur. Suitable habitat and soils, but no vernal pools. Within elevation range. Not recorded in the vicinity[2].
Spermolepis echinata	Apiaceae	Spermolepis	None/None/List B/2.3	Sonoran desert scrub; sandy or rocky/annual herb/March–April/60–1,500 meters	Not recorded in vicinity[2].	No suitable habitat but suitable sandy and rocky loam soils. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Funastrum [=*Cynanchum*] *utahense*	Apocynaceae	Utah vine milkweed	None/None/List D/4.2	Mojavean desert scrub, Sonoran desert scrub; sandy or gravelly/perennial herb/April–June/150–1,435 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Matelea parvifolia	Apocynaceae	Climbing spearleaf	None/None/List B/2.3	Mojavean desert scrub, Sonoran desert scrub; rocky/perennial herb/March–May/440–1,095 meters	Not recorded in vicinity[2].	No suitable habitat; rocky loam soils on site. Slightly below elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Slightly below elevation range. Not recorded in the vicinity[2].
Pilostyles thurberi	Apodanthaceae	Thurber's pilostyles	None/None/List D/4.3	Sonoran desert scrub/perennial herb parasitic/January/0–365 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Not expected to occur. No suitable habitat. Desert species. Not recorded in the vicinity[2].
Asplenium vespertinum	Aspleniaceae	Western spleenwort	None/None/List D/4.2	Chaparral, cismontane woodland, coastal scrub; rocky/rhizomatous herb/February–June/180–1,000 meters	Not recorded in vicinity[2].	Suitable habitat and rocky soils on site. Within elevation range.	Low potential to occur. Suitable habitat and moderately suitable rocky soils. Within elevation range. Not recorded in vicinity[2].
Ambrosia chenopodiifolia	Asteraceae	San Diego bur-sage	None/None/List B/2.1	Coastal scrub/shrub/April–June/55–155 meters	Not recorded in vicinity[2].	No suitable habitat; no preferred soil types included in species description. Outside elevation range.	Not expected to occur. No suitable habitat. Outside elevation range. Not recorded in vicinity[2]. Would likely have been detected during surveys if present.
Ambrosia monogyra	Asteraceae	Singlewhorl burrobrush	None/None/None/2.2	Chaparral, Sonoran desert scrub; sandy/shrub/August–November/10–500 meters	Recorded within surrounding Dulzura and Jamul Mountains quadrangle.	Suitable chaparral habitat and sandy soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Recorded in vicinity[2]. Would likely have been detected during surveys if present.

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Ambrosia pumila	Asteraceae	San Diego ambrosia	FE/None/List A, MSCP/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, sometimes alkaline, often in disturbed areas/rhizomatous herb/April–October/20–415 meters	Recorded within surrounding Barrett Lake, El Cajon, and Jamul Mountains quadrangle.	Suitable chaparral habitat and sandy loam soils. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Recorded in vicinity[2].
Artemisia palmeri	Asteraceae	San Diego sagewort	None/None/List D/4.2	Chaparral, coastal scrub, riparian forest and scrub, riparian woodland; sandy, mesic/deciduous shrub/May–September/15–915 meters	Not recorded in vicinity[2].	Suitable habitat and soils. Within elevation range.	Observed on site within Preserve.
Baccharis vanessae	Asteraceae	Encinitas baccharis	FT/SE/List A, MSCP/1B.1	Chaparral, cismontane woodland; sandstone/deciduous shrub/August–November/60–720 meters	Recorded within Alpine quadrangle.	Suitable chaparral habitat but no sandstone soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in vicinity[2]. Would likely have been detected during surveys if present.
Bahiopsis [=Viguiera] laciniata	Asteraceae	San Diego County viguiera	None/None/List D/4.2	Chaparral, coastal scrub/shrub/February–June/60–750 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Observed on site within Study Area.
Centromadia [=Hemizonia] parryi ssp. *australis*	Asteraceae	Southern tarplant	None/None/List A/1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–November/0–425 meters	Not recorded in vicinity[2].	No suitable habitat or mesic areas on site. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Not recorded in vicinity[2].
Centromadia [=Hemizonia] pungens ssp. *laevis*	Asteraceae	Smooth tarplant	None/None/List A/1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/April–September/0–640 meters	Recorded within surrounding El Cajon quadrangle.	No suitable habitat or soils on site. Within elevation range.	Low potential to occur. No suitable habitat or soils on site. Within elevation range. Recorded in the vicinity[2].
Chaenactis carphoclinia var. *peirsonii*	Asteraceae	Peirson's pincushion	None/None/List A/1B.3	Sonoran desert scrub; sandy/annual herb/March–April/3–500 meters	Not recorded in vicinity[2].	No suitable habitat; but suitable sandy loam soils on site. Within elevation range.	Low potential to occur. No suitable habitat but suitable soils on site. Within elevation range. Not recorded in the vicinity[2].
Chaenactis glabriuscula var. *orcuttiana*	Asteraceae	Orcutt's pincushion	None/None/List A/1B.1	Coastal bluff scrub, sandy; coastal dunes/annual herb/January–August/0–100 meters	Not recorded in vicinity[2].	No suitable habitat; but suitable sandy loam soils on site. Outside elevation range.	Not expected to occur. Coastal species. No suitable habitat on site. Outside elevation range. Not recorded in the vicinity[2].
Chaenactis parishii	Asteraceae	Parish's chaenactis	None/None/List A/1B.3	Chaparral; rocky/perennial herb/May–July/1,300–2,500 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in the vicinity[2].
Corethrogyne filaginifolia var. *incana*	Asteraceae	San Diego sand aster	None/None/List A/1B.1	Chaparral, coastal bluff scrub, coastal scrub/perennial herb/June–September/3–115 meters	Not recorded in vicinity[2].	Suitable habitat; preferred soils not identified for this species. Outside elevation range.	Not expected to occur. Coastal species. Outside elevation range. Not recorded in the vicinity[2].
Corethrogyne filaginifolia var. *linifolia*	Asteraceae	Del Mar Mesa sand aster	None/None/List A MSCP/1B.1	Maritime chaparral (openings), coastal bluff scrub, coastal scrub; sandy/perennial herb/May–September/15–150 meters	Not recorded in vicinity[2].	Suitable habitat and suitable sandy loam on site. Outside elevation range.	Not expected to occur. Coastal species. Outside elevation range. Not recorded in the vicinity[2].
Deinandra [=*Hemizonia*] *conjugens*	Asteraceae	Otay tarplant	FT/SE/List A, MSCP/1B.1	Coastal scrub, valley and foothill grassland; clay/annual herb/May–June/25–300 meters	Recorded within surrounding Jamul Mountains quadrangle.	Suitable coastal scrub habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in vicinity[2].
Deinandra [=*Hemizonia*] *floribunda*	Asteraceae	Tecate tarplant	None/None/List A/1B.2	Chaparral, coastal scrub/annual herb/August–October/70–1,220 meters	Recorded within surrounding Barrett Lake quadrangle.	Suitable habitat present; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Deinandra [=*Hemizonia*] *mohavensis*	Asteraceae	Mojave tarplant	None/SE/List A/1B.3	Chaparral, coastal scrub, riparian scrub; mesic/annual herb/June–October/640–1,600 meters	Not recorded in vicinity[2].	Suitable chaparral or riparian scrub habitats on site, and mesic regions. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in vicinity[2].
Deinandra [=*Hemizonia*] *paniculata*	Asteraceae	Paniculate tarplant	None/None/List D/4.2	Coastal scrub, valley and foothill grassland; usually vernally mesic/annual herb/April–November/25–940 meters	Not recorded in vicinity[2].	Suitable coastal scrub habitat and mesic regions on site. Within elevation range.	Low potential to occur. Suitable habitat. Within elevation range. Not recorded in vicinity[2].
Dieteria [=*Machaeranthera*] *asteroides* var. *lagunensis*	Asteraceae	Mount Laguna Aster	None/SR/List B/2.1	Cismontane woodland, lower montane coniferous forest/perennial herb/July–August/800–2,400 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Ericameria cuneata var. *macrocephala*	Asteraceae	Laguna Mountains goldenbush	None/None/List A/1B.3	Chaparral; granitic/shrub/September–December/1,195–1,850 meters	Not recorded in vicinity[2].	Suitable chaparral but no granitic soils. Below elevation range.	Not expected to occur. No suitable soils. Below elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Ericameria palmeri ssp. *palmeri*	Asteraceae	Palmer's goldenbush	None/None/List B, MSCP/1B.1	Chaparral, coastal scrub; mesic/evergreen shrub/September–November/30–600 meters	Recorded within Alpine and surrounding Barrett Lake, Dulzura, Jamul Mountains, San Vicente Reservoir, and El Cajon quadrangles.	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Erigonum evanidum [=*foliosum*]	Asteraceae	Vanishing wild buckwheat (leafy buckwheat)	None/None/List A/1B.1	Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland; sandy/annual herb/July–October/1,100–2,225 meters	Recorded within Alpine quadrangle.	Suitable chaparral habitat and sandy loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Recorded in the vicinity[2].
Geraea viscida	Asteraceae	Sticky geraea	None/None/List B/2.3	Chaparral (often disturbed)/perennial herb/May–June/450–1,700 meters	Recorded within surrounding Viejas Mountain quadrangle.	Suitable chaparral habitat on site. Preferred soils not identified for this species. Slightly below elevation range.	Low potential to occur. Suitable habitat on site. Slightly below elevation range. Recorded in the vicinity[2].
Grindelia hallii [=*G. hirsutula* var. *hallii*]	Asteraceae	San Diego gumplant	None/None/List A/1B.2	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/perennial herb/July–October/185–1,745 meters	Recorded within surrounding Barrett Lake quadrangle.	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2].
Hazardia orcuttii	Asteraceae	Orcutt's hazardia	FC/ST/List A/1B.1	Chaparral (maritime), coastal scrub; often clay/evergreen shrub/August–October/80–85 meters	Not recorded in vicinity[2].	Moderately suitable habitat but no clay soils. Outside elevation range.	Not expected to occur. Coastal species. No suitable soils. Outside elevation range. Not recorded in the vicinity[2].
Heterotheca sessiliflora ssp. *sanjacintensis*	Asteraceae	San Jacinto golden-aster	None/None/List D/None	Woodlands/366–1,390 meters/unresolved in Jepson	Not recorded in vicinity[2].	No suitable woodland habitat. Preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Holocarpha virgata ssp. *elongata*	Asteraceae	Graceful tarplant	None/None/List D/4.2	Coastal scrub, cismontane woodland, chaparral, valley and foothill grassland/annual herb/May–November/60–1,100 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Hulsea californica	Asteraceae	San Diego sunflower	None/None/List A/1B.3	Chaparral, lower montane coniferous forest, upper montane coniferous forest; openings and burned areas/perennial herb/April–June/915–2,915 meters	Recorded within surrounding Viejas Mountain quadrangle.	Suitable chaparral habitat; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Hulsea mexicana	Asteraceae	Mexican hulsea	None/None/List B/2.3	Chaparral (volcanic, often on burns or disturbed areas)/annual-perennial herb/April–June/1,200 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Hulsea vestita ssp. *callicarpha*	Asteraceae	Beautiful hulsea	None/None/List D/4.2	Chaparral, lower montane coniferous forest; rocky or gravelly, granitic/perennial herb/May–October/915–3,050 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in the vicinity[2].
Hymenothrix wrightii	Asteraceae	Wright's hymenothrix	None/None/List D/4.3	Cismontane woodland, lower montane coniferous forest, valley and foothill grassland/perennial herb/June–October/1,400–1,550 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Isocoma menziesii var. *decumbens*	Asteraceae	Decumbent goldenbush	None/None/List A/1B.2	Chaparral, coastal scrub (sandy, often disturbed areas)/shrub/April–November/10–135 meters	Recorded within surrounding Dulzura, Jamul Mountains, and San Vicente Reservoir quadrangles.	Suitable chaparral habitat and sandy loam soils on site. Outside elevation range.	Low potential to occur. Suitable habitat and soils on site. Outside elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Iva hayesiana	Asteraceae	San Diego marsh-elder	None/None/List B/2.2	marshes and swamps, playas/perennial herb/April–October/10–500 meters	Recorded within surrounding Dulzura and Jamul Mountains quadrangles.	No suitable habitat or playas on site. Within elevation range.	Moderate potential to occur. No suitable habitat or playas on site. Within elevation range. Recorded in the vicinity[2].
Lasthenia glabrata ssp. *coulteri*	Asteraceae	Coulter's goldfields	None/None/List A/1B.1	Saltwater marsh and swamps, playas, vernal pools/annual herb/February–June/1–1,220 meters	Recorded within surrounding Jamul Mountains quadrangle.	No suitable habitat or vernal pools. Within elevation range.	Low potential to occur. No suitable habitat. Within elevation range. Recorded in the vicinity[2].
Leptosyne [=*Coreopsis*] *maritima*	Asteraceae	Sea dahlia	None/None/List B/2.2	Coastal bluff scrub, coastal scrub/perennial herb/March–May/5–150 meters	Not recorded in vicinity2.	No suitable coastal habitat on site; preferred soils not identified for this species. Outside elevation range.	Not expected to occur. Coastal species. No suitable habitat. Outside elevation range. Not recorded in the vicinity2.
Lessingia glandulifera var. *tomentosa*	Asteraceae	Warner Springs lessingia	None/None/List A/1B.3	Chaparral; sandy/annual herb/August–October/870–1,220 meters	Not recorded in vicinity2.	Suitable chaparral habitat and sandy loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in the vicinity2.
Malperia tenuis	Asteraceae	Brown turbins	None/None/List B/2.3	Sonoran desert scrub; sandy, gravelly/annual herb/March–April/15–335 meters	Not recorded in vicinity2.	No suitable habitat; sandy loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity2.
Microseris douglasii var. *platycarpha*	Asteraceae	Small-flowered microseris	None/None/List D/4.2	Cismontane woodland, coastal scrub, valley and foothill grassland, clays/annual herb/March–May/15–1,070 meters	Not recorded in vicinity2.	Suitable chaparral habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils. Within elevation range. Not recorded in the vicinity2.
Packera [=Senecio] ganderi	Asteraceae	Gander's ragwort	None/SR/List A, MSCP/1B.2	Chaparral (burned areas and gabbroic outcrops)/perennial herb/April–June/400–1,200 meters	Recorded within Alpine and surrounding Barrett Lake, Dulzura, El Cajon Mountain, and San Vicente Reservoir quadrangles.	Moderately suitable chaparral habitat on site; although burned areas have mostly recovered. Slightly within elevation range.	Moderate potential to occur. Suitable habitat on site. Slightly within elevation range. Recorded in the vicinity2.
Pentachaeta aurea ssp. *aurea*	Asteraceae	Golden-rayed pentachaeta	None/None/List D/4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/annual herb/March–July/80–1,850 meters	Not recorded in vicinity2.	Suitable chaparral habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity2.

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Senecio aphanactis	Asteraceae	Rayless ragwort	None/None/List B/2.2	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/January–April/15–800 meters	Recorded within surrounding Jamul Mountains quadrangle.	Suitable chaparral habitat but no alkaline soils. Within elevation range.	Moderate potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2].
Stylocline citroleum	Asteraceae	Oil neststraw	None/None/List A/1B.1	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/annual herb/March–April/50–400 meters	Not recorded in vicinity[2].	Suitable coastal scrub habitat but no clay soils present. Within elevation range.	Low potential to occur. Suitable habitat, but no suitable soils on site. Within elevation range. Not recorded in the vicinity[2].
Symphyotrichum defoliatum	Asteraceae	San Bernardino aster	None/None/None/1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic)/perennial rhizomatous herb/July–November/2–2,040 meters	Recorded within surrounding Tule Springs quadrangle.	Suitable coastal scrub habitat and mesic regions found on site. Within elevation range.	Moderate potential to occur. Suitable habitat and mesic regions on site. Within elevation range. Recorded in vicinity2.
Viguiera purissimae	Asteraceae	La Purissima viguiera	None/None/List A/2.3	Coastal bluff scrub, chaparral/shrub/April–September/365–425 meters	Not recorded in vicinity2.	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Low potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity2. Would likely have been detected during surveys if present.
Xanthisma (=Machaeranthera) junceum	Asteraceae	Rush-like bristleweed	None/None/List D/4.3	Chaparral, coastal scrub/perennial herb/June–January/240–1,000 meters	Not recorded in vicinity2.	Suitable habitat. Within elevation range. Not recorded in vicinity2.	Observed on site within Preserve.
Xylorhiza orcuttii	Asteraceae	Orcutt's woody aster	None/None/List A/1B.2	Sonoran desert scrub/perennial herb/March–April/0–365 meters	Not recorded in vicinity2.	No suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Not recorded in the vicinity2.
Azolla microphylla [=*mexicana*]	Azollaceae	Mexican mosquito fern	None/None/List D/4.2	Marshes and swamps; ponds, slow water/annual/perennial herb/August/30–100 meters	Not recorded in vicinity2.	Although there are riparian areas, no suitable habitat marsh/swamp habitat on site. Above elevation range.	Not expected to occur. No suitable habitat. Outside elevation range. Not recorded in vicinity2.
Berberis fremontii [=B. higginsiae]	Berberidaceae	Fremont barberry	None/None/List C/3	Chaparral , Joshua tree "woodland", pinyon and juniper woodland; rocky/evergreen shrub/April–June/840–1,850 meters	Recorded within surrounding Barrett Lake quadrangle.	Suitable chaparral habitat and rocky loam soils. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Recorded in vicinity[2]. Would likely have been detected during surveys if present.
Berberis nevinii	Berberidaceae	Nevin's barberry	FE/SE/List A, MSCP/1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/evergreen shrub/March–June/274–825 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy loam soils. Within elevation range.	Low potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in vicinity[2]. Would likely have been detected during surveys if present.
Cryptantha costata	Boraginaceae	Ribbed cryptantha	None/None/List D/4.3	Desert dunes, Mojavean desert scrub, Sonoran desert scrub; sandy/annual herb/February–May/60–500 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Within elevation range.	Not expected to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Cryptantha ganderi	Boraginaceae	Gander's cryptantha	None/None/List A/1B.1	Desert dunes, Sonoran desert scrub; sandy/annual herb/February–May/160–400 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Within elevation range.	Not expected to occur. Desert species. No suitable habitat. Not recorded in the vicinity[2].
Cryptantha holoptera	Boraginaceae	Winged cryptantha	None/None/List D/4.3	Mojavean desert scrub, Sonoran desert scrub/annual herb/March–April/100–1,690 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Within elevation range.	Not expected to occur. Desert species. No suitable habitat. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Harpagonella palmeri	Boraginaceae	Palmer's grapplinghook	None/None/List D/4.2	Chaparral, coastal scrub, valley and foothill grassland; clay/annual herb/March–May/20–955 meters	Not recorded in vicinity[2].	Suitable habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils. Within elevation range. Not recorded in the vicinity[2].
Nama stenocarpum	Boraginaceae	Mud nama	None/None/List B/2.2	Marsh and swamps, lake margins and riverbanks/annual-perennial herb/January–July/5–500 meters	Recorded within surrounding Jamul Mountains quadrangle.	No suitable wetland habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Recorded in the vicinity[2].
Pectocarya peninsularis	Boraginaceae	Baja California bur-comb	None/None/List D/None	Sonoran desert; washes, roadsides, clearings/annual herb/February–April/30–300 meters	Not recorded in vicinity[2].	No suitable desert habitat on site; preferred soils not identified for this species. Within elevation range.	Not expected to occur. No suitable habitat on site. Not recorded in the vicinity[2].
Phacelia stellaris	Boraginaceae	Brand's phacelia	FC/None/List A/1B.1	Coastal dunes, coastal scrub/annual herb/March–June/1–400 meters	Not recorded in vicinity[2].	Suitable coastal scrub habitat on site. Within elevation range.	Low potential to occur. Moderately suitable habitat but this species is generally found in more coastal regions. Within elevation range. Not recorded in the vicinity[2].
Boechera johnstonii [=*B. hirshbergiae (=Arabis h.)*]	Brassicaceae	Hirshberg's rockcress	None/None/List A/None	Chaparral, oak-pine savanna; rocky or gravelly soil/perennial herb/April–June/1,357–2,072 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky soils within Sycamore South Study Area. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in the vicinity[2].
Caulanthus simulans	Brassicaceae	Payson's jewel-flower	None/None/List D/4.2	Chaparral, coastal scrub; sandy and granitic/annual herb/March–May/90–2,200 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2].
Caulanthus heterophyllus var. *pseudosimulans*	Brassicaceae	Slender-pod jewelflower	None/None/MSCP/None	Coastal sage scrub, chaparral; annual herb/March–May/0–1,300	Not recorded in the vicinity[2].	Suitable habitat on site. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Erysimum ammophilum	Brassicaceae	Coast wallflower	None/None/MSCP/1B.2	Chaparral, coastal dunes, coastal scrub (sandy, openings)/perennial herb/February–June/0–60 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy soils.	Not expected to occur. Coastal species. Outside elevation range. Not recorded in the vicinity[2].
Lepidium flavum var. *felipense*	Brassicaceae	Borrego Valley pepper-grass	None/None/List A/1B.2	Pinyon and juniper woodland, Sonoran desert scrub; sandy/annual herb/March–May/455–840 meters	Not recorded in vicinity[2].	No suitable habitat but sandy soils on site. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Lepidium virginicum var. *robinsonii*	Brassicaceae	Robinson pepper-grass	None/None/List A/1B.2	Chaparral, coastal scrub/annual herb/January–July/1–885 meters	Recorded within Alpine and surrounding Dulzura, Jamul Mountains, Viejas Mountain, El Cajon Mountain, and San Vicente Reservoir quadrangles.	Suitable chaparral habitat on site; preferred soils not identified for this species. Within elevation range.	High potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2].
Lyrocarpa coulteri [var. *palmeri*]	Brassicaceae	Palmer's lyrepod	None/None/List D/4.3	Sonoran desert scrub; gravelly or rocky/perennial herb/December–April/120–795 meters	Not recorded in vicinity[2].	No suitable habitat; rocky loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Nasturtium [=*Rorippa*] *gambellii*	Brassicaceae	Gambel's watercress	FE/ST/List A/1B.1	Marshes and swamps, freshwater or brackish/rhizomatous herb/April–October/5–330 meters	Not recorded in vicinity[2].	No suitable wetland habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Sibaropsis hammittii	Brassicaceae	Hamitt's clay cress	None/None/List A/1B.2	Chaparral (openings), valley and foothill grassland; clay/annual herb/March–April/720–1,065 meters	Recorded within Alpine and surrounding Viejas Mountain quadrangle.	Suitable chaparral habitat but no clay soils. Below elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Below elevation range. Recorded in the vicinity[2].
Streptanthus bernardinus	Brassicaceae	Laguna Mountains jewelflower	None/None/List D/4.3	Chaparral, lower montane coniferous forest/perennial herb/May–August/670– 2,500 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Streptanthus campestris	Brassicaceae	Southern jewelflower	None/None/List A/1B.3	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; rocky/perennial herb/May– July/900–2,300 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in the vicinity[2].
Bursera microphylla	Burseraceae	Little-leaf elephant tree	None/None/List B/2.3	Sonoran desert scrub; rocky/deciduous tree/June–July/200–700 meters	Not recorded in vicinity2.	No suitable habitat but rocky loam soils on site. Within elevation range.	Not expected to occur. Desert species. No suitable habitat. Not recorded in the vicinity2.
Bergerocactus emoryi	Cactaceae	Golden-spined cereus	None/None/List B/2.2	Closed-cone coniferous forest, chaparral, coastal scrub; sandy/stem succulent/May–June/3–395 meters	Not recorded in vicinity2.	Suitable chaparral habitat and sandy loam soils. Within elevation range.	Low potential to occur. Suitable habitat and soils. Within elevation range. Not recorded in the vicinity2. Would likely have been detected during surveys if present.
Cylindropuntia [=*Opuntia*] *californica* var. *californica*	Cactaceae	Snake cholla	None/None/List A MSCP/1B.1	Chaparral, coastal scrub/stem succulent/April–May/30–150 meters	Recorded within surrounding Jamul Mountains quadrangle.	Suitable chaparral habitat; preferred soils not identified for this species. Outside elevation range.	Low potential to occur. Suitable habitat on site. Outside elevation range. Recorded in the vicinity2. Would likely have been detected during surveys if present.
Cylindropuntia echinocarpa [=*Opuntia wigginsii*]	Cactaceae	Wiggins cholla	None/None/List C/3.3	Sonoran desert scrub; sandy/stem succulent/ March/30–885 meters	Not recorded in vicinity2.	No suitable habitat but sandy loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat on site. Not recorded in vicinity2. Would likely have been detected during surveys if present.
Cylindropuntia (=Opuntia) wolfii	Cactaceae	Wolf's cholla	None/None/List D/4.3	Sonoran desert scrub/stem succulent/ March–May/100–1,200 meters	Not recorded in vicinity2.	No suitable habitat; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat. Within elevation range. Not recorded in the vicinity2. Would likely have been detected during surveys if present.
Ferocactus viridescens	Cactaceae	San Diego barrel cactus	None/None/List B MSCP/2.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/stem succulent/May–June/3–450 meters	Recorded within surrounding Jamul Mountains, San Vicente Reservoir, and El Cajon quadrangles.	Suitable habitat present; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2]. Would likely have been detected during surveys if present.
Downingia concolor var. *brevior*	Campanulaceae	Cuyamaca Lake downingia	None/SE/List A/1B.1	Meadows and seeps (vernally mesic), vernal pools/annual herb/May–July/1,380–1,500 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Githopsis diffusa ssp. *filicaulis*	Campanulaceae	Mission Canyon bluecup	None/None/List C/3.1	Chaparral (mesic, disturbed areas)/annual herb/April–June/450–700 meters	Recorded within Alpine and surrounding Tule Springs, El Cajon Mountain, and San Vicente Reservoir quadrangles.	No suitable mesic chaparral on site. Preferred soils not identified for this species. Slightly below elevation range.	Low potential to occur. No suitable mesic habitat on site. Slightly below elevation range. Recorded in the vicinity[2].
Aphanisma blitoides	Chenopodiaceae	Aphanisma	None/None/List A, MSCP/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/annual herb/March–June/1–305 meters	Not recorded in vicinity[2].	Suitable sandy soils but no suitable habitat on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat on site. Within elevation range. More commonly found on the coast. Not recorded in vicinity[2].
Atriplex coulteri	Chenopodiaceae	Coulter's saltbush	None/None/List A/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/March–October/3–460 meters	Not recorded in vicinity[2].	No suitable habitat or alkaline/clay soils on site. Within elevation range.	Low potential to occur. No suitable habitat or soils on site. Within elevation range. Not recorded in vicinity[2].
Atriplex pacifica	Chenopodiaceae	South Coast saltscale	None/None/List A/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas/annual herb/March–October/0–140 meters	Recorded within surrounding Dulzura and Jamul Mountains quadrangles.	No suitable coastal habitats or playas on site. Above elevation range.	Not expected to occur. No suitable habitat on site. Above elevation range. More commonly found on the coast.
Atriplex parishii	Chenopodiaceae	Parish's brittlescale	None/None/List A/1B.1	Chenopod scrub, playas, vernal pools; alkaline/annual herb/June–October/25–1,900 meters	Not recorded in vicinity[2].	No suitable habitat or alkaline soils on site. Within elevation range.	Low potential to occur. No suitable habitat or soils on site. Within elevation range. Not recorded in vicinity[2].
Atriplex serenana var. *davidsonii*	Chenopodiaceae	Davidson's saltscale	None/None/List A/1B.2	Coastal bluff scrub, coastal scrub; alkaline/annual herb/April–October/10–200 meters	Not recorded in vicinity[2].	No suitable coastal habitats or alkaline soils on site. Above elevation range.	Not likely to occur. No suitable habitat or soils on site. Outside elevation range. Not recorded in vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Suaeda esteroa	Chenopodiaceae	estuary seablite	FE/None/List A/1B.1	Coastal saltmarshes and swamps/evergreen shrub/July–October/0–15 meters	Not recorded in vicinity[2].	No suitable habitat on site. Outside elevation range.	Not expected to occur. No suitable habitat. Outside elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Suaeda taxifolia	Chenopodiaceae	Woolly seablite	None/None/List D/4.2	Coastal bluff scrub, coastal dunes, margins of coastal saltmarshes and swamps/evergreen shrub/January–December/0–50 meters	Not recorded in vicinity[2].	No suitable habitat on site. Outside elevation range.	Not expected to occur. No suitable habitat on site. Outside elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Convolvulus simulans	Convolvulaceae	Small-flowered morning-glory	None/None/List D/4.2	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/March–July/30–700 meters	Not recorded in vicinity[2].	Suitable habitat but no clay or serpentinite soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Not recorded in the vicinity[2].
Dichondra occidentalis	Convolvulaceae	Western dichondra	None/None/List D/4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/rhizomatous herb/March–July/50–500 meters	Not recorded in vicinity[2].	Suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Dudleya alainae	Crassulaceae	Banner dudleya (Reiser's dudleya)	None/None/List C/3.2	Chaparral, lower montane coniferous forest, Sonoran desert scrub; rocky/perennial herb/May–July/740–1,200 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils. Below elevation range.	Low potential to occur. Suitable habitat and soils. Below elevation range. Not recorded in vicinity[2].
Dudleya attenuata ssp. *orcuttii*	Crassulaceae	Orcutt's dudleya	None/None/List B/2.1	Coastal bluff scrub, chaparral, coastal scrub; rocky or gravelly/perennial herb/May–July/3–50 meters	Not recorded in vicinity[2].	Suitable habitat on site and rocky loam soil on site. Outside elevation range.	Not expected to occur. Coastal species. Outside elevation range. Not recorded in the vicinity[2].
Dudleya blochmaniae ssp. *blochmaniae*	Crassulaceae	Blochman's dudleya	None/None/List A, MSCP/1B.1	Chaparral, coastal bluff scrub, coastal scrub, valley and foothill grassland, rocky; often clay or serpentinite/perennial herb/April–June/5–450 meters	Not recorded in vicinity[2].	Suitable habitat on site but no clay or serpentinite soils. Within elevation range.	Low potential to occur. Suitable habitat present, but suitable soils not present on site. Within elevation range. Not recorded in the vicinity[2].
Dudleya brevifolia [=*D. blochmaniea* ssp. *brevifolia*]	Crassulaceae	Short-leaved dudleya	None/SE/List A, MSCP/1B.1	Maritime chaparral (openings), coastal scrub; Torrey sandstone/perennial herb/April–May/30–250 meters	Not recorded in vicinity[2].	Suitable coastal scrub habitat but no suitable sandstone soils. Outside elevation range.	Low potential to occur. Suitable habitat but no suitable soils. Outside elevation range. Not recorded in the vicinity[2].
Dudleya multicaulis	Crassulaceae	Many-stemmed dudleya	None/None/List A/1B.2	Chaparral, coastal scrub, valley and foothill grassland; often clays/perennial herb/April–July/15–790 meters	Not recorded in vicinity[2].	Suitable chaparral habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils. Within elevation range. Not recorded in the vicinity[2].
Dudleya variegata	Crassulaceae	Variegated dudleya	None/None/List A, MSCP/1B.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/April–June/3–580 meters	Recorded within Alpine and surrounding Dulzura, Jamul Mountains, San Vicente Reservoir, and El Cajon quadrangles.	Suitable chaparral habitat but no clay soils. Within elevation range.	Moderate potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2].
Dudleya viscida	Crassulaceae	Sticky dudleya	None/None/List A, MSCP/1B.2	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/perennial herb/May–June/10–550 meters	Not recorded in vicinity[2].	Suitable habitat on site and rocky loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils. Within elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Hesperocyparis [=*Cupressus*] *forbesii*	Cupressaceae	Tecate cypress	None/None/List A, MSCP/1B.1	Closed-cone coniferous forest, chaparral; clay, gabbroic or metavolcanic/evergreen tree/NA/80–1,500 meters	Recorded within Alpine and surrounding Tule Springs, Dulzura, and Jamul Mountains quadrangles.	Moderately suitable habitat but no suitable soils on site. Within elevation range.	Low potential to occur. Moderately suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Hesperocyparis [=*Cupressus*] *stephensonii*	Cupressaceae	Cuyamaca cypress	None/None/List A/1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, riparian forest; gabbroic/evergreen tree/NA/1,035–1,705 meters	Recorded within surrounding Tule Springs quadrangle.	Suitable chaparral habitat on site but no gabbroic soils. Below elevation range.	Low potential to occur. Suitable habitat but no suitable soils. Below elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Carex obispoensis	Cyperaceae	San Luis Obispo sedge	None/None/ None/1B.2	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland; often serpentinite seeps, sometimes gabbro, often on clay soils/April–June/10– 820 meters	Recorded within Alpine quadrangle.	Suitable chaparral habitat but no suitable soils on site. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2].
Arctostaphylos glandulosa ssp. *crassifolia*	Ericaceae	Del Mar manzanita	FE/None/List A, MSCP/1B.1	Maritime chaparral; sandy/evergreen shrub/December–June/0–365 meters	Not recorded in vicinity[2].	Suitable sandy soils but no suitable habitat on site. Within elevation range.	Low potential to occur. No suitable habitat but suitable soils on site. Within elevation range. Not recorded in vicinity[2]. Would likely have been detected during surveys if present.
Arctostaphylos otayensis	Ericaceae	Otay manzanita	None/None/List A, MSCP/1B.2	Chaparral, cismontane woodland; metavolcanic/evergreen shrub/January–April/275–1,700 meters	Recorded within surrounding Jamul Mountains quadrangle.	Suitable habitat but no metavolcanic soils. Within elevation range.	Low potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2]. Would likely have been detected during surveys if present.
Arctostaphylos rainbowensis	Ericaceae	Rainbow manzanita	None/None/List A/1B.1	Chaparral/evergreen shrub/December–March/205–670 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; no preferred soil types included in species description. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in vicinity[2]. Would likely have been detected during surveys if present.
Comarostaphylis diversifolia ssp. *diversifolia*	Ericaceae	Summer holly	None/None/List A/1B.2	Chaparral, cismontane woodland/evergreen shrub/April–June/30–790 meters	Recorded within surrounding Dulzura, Jamul Mountains, and San Vicente Reservoir quadrangles.	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Ornithostaphylos oppositifolia	Ericaceae	Palo blanco	None/SE/List B/2.1	Chaparral/evergreen shrub/January–April/55–800 meters	Not recorded in vicinity[2].	Suitable chaparral habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Chamaesyce abramsiana	Euphorbaceae	Abrams' spurge	None/None/ None/2.2	Mojavean desert scrub, Sonoran desert scrub; sandy/annual herb/September–November/5–915 meters	Recorded within Alpine quadrangle.	Suitable sandy loam soils but no suitable habitat on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat on site. Within elevation range. Recorded in the vicinity[2].
Chamaesyce arizonica	Euphorbaceae	Arizona spurge	None/None/List B/2.3	Sonoran desert scrub; sandy/perennial herb/March–April/50–300 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Chamaesyce platysperma	Euphorbaceae	Flat-seeded spurge	None/None/List A/1B.2	Desert dunes, Sonoran desert scrub; sandy/annual herb/February–September/65–100 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Above elevation range.	Not expected to occur. Desert species. No suitable habitat on site. Above elevation range. Not recorded in the vicinity[2].
Chamaesyce revoluta	Euphorbaceae	Thread-stemmed spurge	None/None/List D/4.3	Mojavean desert scrub; rocky/annual herb/August–September/1,095–3,100 meters	Not recorded in vicinity[2].	No suitable habitat but rocky loam soils on site. Below elevation range.	Low potential to occur. Suitable soils but no suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Ditaxis serrata var. *californica*	Euphorbaceae	California ditaxis	None/None/List C/3.2	Sonoran desert scrub/perennial herb/March–December/30–1,000 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Not expected to occur. Desert species. No suitable habitat on site. Not recorded in the vicinity[2].
Euphorbia misera	Euphorbiaceae	Cliff spurge	None/None/List B/2.2	Coastal bluff scrub, coastal scrub; rocky/shrub/December–August/10–500 meters	Not recorded in vicinity[2].	Suitable coastal scrub habitat and rocky loam soils on site. Within elevation range.	Low potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Acmispon [=*Lotus*] *haydonii*	Fabaceae	Pygmy lotus	None/None/List A/1B.3	Pinyon and juniper woodland, Sonoran desert scrub; rocky/perennial herb/January–June/520–1,200 meters	Not recorded in vicinity[2].	No suitable vegetation but rocky soils present. Below elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Below elevation range. Not recorded in vicinity[2].
Astragalus crotalariae	Fabaceae	Salton milk-vetch	None/None/List D/4.3	Sonoran desert scrub; sandy or gravelly/perennial herb/January–April/60–250 meters	Not recorded in vicinity[2].	Suitable sandy soils but no suitable habitat. Slightly outside elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Outside elevation range. Not recorded in vicinity[2].
Astragalus deanei	Fabaceae	Dean's milk-vetch	None/None/List A, MSCP/1B.1	Chaparral, cismontane woodland, coastal scrub, riparian forest/perennial herb/February–May/75–695 meters	Recorded within Alpine quadrangle, and surrounding Barrett Lake, Jamul Mountains, El Cajon Mountain, El Cajon, and Tule Springs quadrangles.	Suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2].
Astragalus douglasii var. *perstrictus*	Fabaceae	Jacumba milk-vetch	None/None/List A/1B.2	Chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland; rocky/perennial herb/April–June/900–1,370 meters	Not recorded in vicinity[2].	Suitable habitat and rocky soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in vicinity[2].
Astragalus insularis var. *harwoodii*	Fabaceae	Harwood's milk-vetch	None/None/List B/2.2	Desert dunes, Mojavean desert scrub; sandy or gravelly/annual herb/January–May/0– 710 meters	Not recorded in vicinity[2].	Suitable sandy soils but no suitable habitat on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in vicinity[2].
Astragalus lentiginosus var. *borreganus*	Fabaceae	Borrego milk-vetch	None/None/List D/4.3	Mojavean desert scrub, Sonoran desert scrub; sandy/annual herb/February–May/30–320 meters	Not recorded in vicinity[2].	Suitable sandy soils but no suitable habitat on site. Within elevation range.	Not expected to occur. Desert species. No suitable habitat. Not recorded in vicinity[2].
Astragalus magdalenae var. *peirsonii*	Fabaceae	Peirson's milk-vetch	FT/SE/List A/1B.2	Desert dunes/perennial herb/December–April/-55–250 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not recorded for this species. Outside elevation range.	Not expected to occur. Desert species. No suitable habitat. Not recorded in vicinity[2]..
Astragalus oocarpus	Fabaceae	San Diego milk-vetch	None/None/List A/1B.2	Chaparral (openings), cismontane woodland/perennial herb/May–August/305–1,524 meters	Recorded within Alpine quadrangle, and surrounding Dulzura, El Cajon Mountain, and Tule Springs quadrangles.	Suitable habitat on site; preferred soils not recorded for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2].
Astragalus pachypus var. *jaegeri*	Fabaceae	Jaeger's milk-vetch	None/None/List A/1B.1	Chaparral, cismontane woodland, coastal scrub, valley and foothill grasslands; rocky or sandy/shrub/December–June/365–915 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam and sandy loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in vicinity[2].
Astragalus tener var. *titi*	Fabaceae	Coastal dunes milk-vetch	FE/SE/List A, MSCP/1B.1	Coastal bluff scrub, coastal dunes, coastal prairie; often vernally mesic areas/annual herb/March–May/1–50 meters	Not recorded in vicinity[2].	Suitable mesic areas but not suitable habitat types on site. Outside elevation range.	Not expected to occur. Coastal species. No suitable habitat. Outside elevation range. Not recorded in vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Calliandra eriophylla	Fabaceae	Pink fairy Duster	None/None/List B/2.3	Sonoran desert scrub; sandy or rocky/deciduous shrub/January–March/120–1,500 meters	Not recorded in vicinity[2].	No suitable habitat but suitable sandy and rocky loam soils. Within elevation range.	Low potential to occur. No suitable habitat but suitable soils on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Hosackia [=*Lotus*] *crassifolius* var. *otayensis*	Fabaceae	Otay Mountains lotus	None/None/List A/1B.1	Chaparral (metavolcanic, often in disturbed areas)/perennial herb/May–August/915–1,005 meters	Not recorded in vicinity[2].	Moderately suitable habitat on site; no metavolcanic soils. Below elevation range.	Not expected to occur. No suitable soil on site. Below elevation range. Not recorded in the vicinity[2].
Lathyrus splendens	Fabaceae	Pride of California	None/None/List D/4.3	Chaparral/perennial herb/March–June/2001,525 meters	Not recorded in vicinity[2].	Suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Lotus nuttallianus	Fabaceae	Nuttall's lotus	None/None/List A, MSCP/1B.1	Coastal dunes, coastal scrub; sandy/annual herb/March–June/0–10 meters	Not recorded in vicinity[2].	Moderately suitable coastal scrub habitat; sandy loam soils on site. Outside elevation range.	Not expected to occur. Coastal species. Above elevation range. Not recorded in the vicinity[2].
Lupinus excubitus var. *medius*	Fabaceae	Mountain Springs bush lupine	None/None/List A/1B.3	Pinyon and juniper woodland, Sonoran desert scrub/shrub/March–May/425–1,370 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Slightly below elevation range.	Low potential to occur. No suitable habitat. Slightly below elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Rupertia rigida	Fabaceae	Parish psoralea	None/None/List D/4.3	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble plain, valley and foothill grassland/perennial herb/June–August/700–2,500 meters	Not recorded in vicinity[2].	Suitable habitat on site; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Senna covesii	Fabaceae	Cove's cassia	None/None/List B/2.2	Sonoran desert scrub; sandy/perennial herb/March–June/305–1,070 meters	Recorded within surrounding Viejas Mountain quadrangle.	No suitable habitat but sandy loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Recorded in the vicinity[2].
Thermopsis californica var. *semota*	Fabaceae	Velvety false lupine	None/None/List A/1B.2	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/rhizomatous herb/March–June/1,000–1,870 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Below elevation range.	Low potential to occur. No suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Quercus cedrosensis	Fagaceae	Cedros Island oak	None/None/List B/2.2	Closed-cone coniferous forest, chaparral, coastal scrub/evergreen tree/April–May/255–960 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Low potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Quercus dumosa	Fagaceae	Nuttall's scrub oak	None/None/List A/1B.1	Closed-cone coniferous forest, chaparral, coastal scrub, sandy and clay loam soils/shrub/February–April/15–400 meters	Recorded within Alpine and surrounding Dulzura and El Cajon quadrangles.	Suitable habitat and sandy loam soils on site. Within elevation range.	Moderate potential to occur; however typically occurs closer to the coast. Suitable habitat and soils on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Quercus engelmannii	Fagaceae	Engelmann oak	None/None/List D/4.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/deciduous tree/March–June/50–1,300 meters	Not recorded in vicinity[2].	Suitable habitat present. Within elevation range.	Observed on site within Preserve.
Frankenia palmeri	Frankeniaceae	Palmer's frankenia	None/None/List B/2.1	Coastal dunes, coastal saltwater marsh and swamps, playas/perennial herb/May–July/0–10 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Outside elevation range.	Not expected to occur. Coastal species. No suitable habitat on site. Outside elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Gentiana fremotii	Gentianaceae	Fremont's gentian	None/None/ None/2.3	Meadows and seeps (mesic), upper montane coniferous forest/June–August/annual herb/2,400–2,700 meters	Recorded within surrounding Barrett Lake quadrangle.	No suitable habitat on site; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat or soils on site. Below elevation range.
California [=*Erodium*] *macrophylla*	Geraniaceae	Round-leaved filaree	None/None/List B/1B.1	Cismontane woodland, valley and foothill grassland; clay/annual herb/March–May/15–1,200 meters	Recorded within surrounding El Cajon Mountain quadrangle.	Moderately suitable woodland habitat within riparian corridors but no clay soils on site. Within elevation range.	Low potential to occur. Suitable habitat or soils on site. Within elevation range. Recorded in vicinity[2].
Ribes canthariforme	Grossulariaceae	Moreno currant	None/None/List A/1B.3	Chaparral, riparian scrub/deciduous shrub/February–April/340–1,200 meters	Recorded within Alpine and surrounding Barrett Lake, Viejas Mountain, and El Cajon Mountain quadrangles.	Suitable chaparral habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Ribes viburnifolium	Grossulariaceae	Santa Catalina Island currant	None/None/List A/1B.2	Chaparral, cismontane woodland/evergreen shrub/February–April/30–305 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Juglans californica	Juglandaceae	California black walnut	None/None/List D/4.2	Chaparral, cismontane woodland, coastal scrub/; alluvial/deciduous tree/March–August/50–900 meters	Not recorded in vicinity[2].	Suitable chaparral habitat but no alluvial soils on site. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Juncus acutus var. *leopoldii*	Juncaceae	Southwestern spiny rush	None/None/List D/4.2	Coastal dunes (mesic), meadows and seeps (alkaline seeps), coastal saltwater marsh/rhizomatous herb/May–June/3–900 meters	Not recorded in vicinity[2].	No suitable habitat or alkaline/mesic soils. Within elevation range.	Low potential to occur. No suitable habitat or soils. Within elevation range. Not recorded in the vicinity[2].
Juncus cooperi	Juncaceae	Cooper's rush	None/None/List D/4.3	Meadows and seeps, mesic, alkaline or saline/perennial herb/April–May/260–1,770 meters	Not recorded in vicinity[2].	No suitable habitat or alkaline/mesic soils. Within elevation range.	Low potential to occur. No suitable habitat or soils. Within elevation range. Not recorded in the vicinity[2].
Acanthomintha ilicifolia	Lamiaceae	San Diego thornmint	FT/SE/List A, MSCP/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/April–June/10–960 meters	Recorded within Alpine quadrangle, and surrounding Dulzura, Jamul Mountains, El Cajon Mountain, San Vicente Reservoir, and El Cajon quadrangles.	Suitable chaparral habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in vicinity[2].
Clinopodium [=*Satureja*] *chandleri*	Lamiaceae	San Miguel savory	None/None/List A, MSCP/1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic, or metavolcanic/shrub/March–July/120–1,075 meters	Recorded within Alpine and surrounding Dulzura, Jamul Mountains, and San Vicente Reservoir quadrangles.	Suitable habitat present and rocky loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Lepechinia cardiophylla	Lamiaceae	Heart-leaved pitcher sage	None/None/List A, MSCP/1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland/shrub/April–July/520–1,370 meters	Not recorded in vicinity[2].	Suitable habitat on site; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in vicinity[2]. Would likely have been detected during surveys if present.
Lepechinia ganderi	Lamiaceae	Gander's pitcher sage	None/None/List A, MSCP/1B.3	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/shrub/June–July/305–1,005 meters	Recorded within surrounding San Vicente Reservoir quadrangle.	Suitable habitat but no gabbroic or metavolcanic soils on site. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Monardella hypoleuca ssp. *lanata*	Lamiaceae	Felt-leaved monardella	None/None/List A, MSCP/1B.2	Chaparral, cismontane woodland/rhizomatous herb/June–August/300–1,575 meters	Recorded within Alpine and surrounding Barrett Lake, Jamul Mountains, Viejas Mountain, El Cajon Mountain, San Vicente Reservoir, and El Cajon quadrangles.	Suitable chaparral habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2].
Monardella macrantha ssp. *hallii*	Lamiaceae	Hall's monardella	None/None/List A/1B.3	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland/rhizomatous herb/June–October/730–2,195 meters	Not recorded in vicinity[2].	Suitable chaparral habitat on site; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Monardella nana ssp. *leptosiphon*	Lamiaceae	San Felipa monardella	None/None/List A/1B.2	Chaparral, lower montane coniferous forest/rhizomatous herb/June–July/1,200–1,855 meters	Not recorded in vicinity[2].	Suitable chaparral habitat on site; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Monardella stoneae	Lamiaceae	Jennifer's monardella	None/None/List A/1B.2	Closed-cone coniferous forest, chaparral, coastal scrub, riparian scrub; usually rocky intermittent streambeds/perennial herb/June–September/10–790 meters	Not recorded in vicinity[2].	Suitable habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Monardella viminea	Lamiaceae	Willowy monardella	FE/SE/List A, MSCP/1B.1	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–August/50–225 meters	Recorded within surrounding San Vicente Reservoir quadrangle.	Suitable habitat; preferred soils not identified for this species. Slightly above elevation range.	Moderate potential to occur. Suitable habitat on site. Slightly above elevation range. Not recorded in the vicinity[2].
Pogogyne abramsii	Lamiaceae	San Diego mesa mint	FE/SE/List A, MSCP/1B.1	Vernal pools/annual herb/March–July/90–200 meters	Not recorded in vicinity[2].	No vernal pools on site. Outside elevation range.	Not expected to occur. No suitable habitat on site. Outside elevation range. Not recorded in the vicinity[2].
Pogogyne nudiuscula	Lamiaceae	Otay Mesa mint	FE/SE/List A, MSCP/1B.1	Vernal pools/annual herb/May–July/90–250 meters	Not recorded in vicinity[2].	No vernal pools on site. Outside elevation range.	Not expected to occur. No suitable habitat on site. Outside elevation range. Not recorded in the vicinity[2].
Salvia eremostachya	Lamiaceae	Desert sage	None/None/List D/4.3	Sonoran desert scrub; rocky or gravelly/evergreen shrub/March–May/700–1,400 meters	Not recorded in vicinity[2].	No suitable habitat but rocky loam soils on site. Below elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Salvia munzii	Lamiaceae	Munz's sage	None/None/List B/2.2	Chaparral, coastal scrub/evergreen shrub/February–April/120–1,065 meters	Recorded within surrounding Dulzura and Jamul Mountains quadrangle.	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2]. Would have been observed if present.
Scutellaria bolanderi ssp. *austromontana*	Lamiaceae	Southern skullcap	None/None/List A/1B.2	Chaparral, cismontane woodland, lower montane coniferous forest; mesic/rhizomatous herb/June–August/425–2,000 meters	Recorded within surrounding Viejas Mountain quadrangle.	Suitable chaparral on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Calochortus catalinae	Liliaceae	Catalina mariposa lily	None/None/List D/4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/bulbiferous herb/March–June/15–700 meters	Not recorded in vicinity[2].	Suitable chaparral habitat on site; no preferred soils included in species description. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Calochortus dunnii	Liliaceae	Dunn's mariposa lily	None/SR/List A, MSCP/1B.2	Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/bulbiferous herb/April–June/185–1,830 meters	Recorded within surrounding Barrett Lake, Dulzura, Viejas Mountain, Tule Springs, and El Cajon Mountain quadrangles.	Suitable chaparral habitat and rocky loam soils. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Lilium humboldtii ssp. *ocellatum*	Liliaceae	Ocellated Humboldt lily	None/None/List D/4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; openings/bulbiferous herb/March–July/30–1,800 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in the vicinity[2].
Lilium parryi	Liliaceae	Lemon Lily	None/None/List A/1B.2	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest; mesic/bulbiferous herb/July–August/1,220–2,745 meters	Not recorded in vicinity[2].	Suitable riparian forest and mesic regions on site. Below elevation range.	Low potential to occur. Suitable habitat present. Below elevation range. Not recorded in the vicinity[2].
Fritillaria biflora	Lilliaceae	Chocolate lily	None/None/List D/None	Valley grassland, foothill woodland/perennial herb/0–1,200 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Limnanthes gracilis ssp. *parishii*	Limnanthaceae	Cuyamaca meadowfoam	None/SE/List A/1B.2	Lower montane coniferous forest, meadows and seeps, vernal pools; vernally mesic/annual herb/April–June/600–2,000 meters	Not recorded in vicinity[2].	Suitable riparian forest and mesic regions on site. Below elevation range.	Low potential to occur. Suitable habitat and mesic regions present. Below elevation range. Not recorded in the vicinity[2].
Mentzelia hirsutissima	Loasaceae	Hairy stickleaf	None/None/List B/2.3	Sonoran desert scrub;rocky/annual herb/March–May/0–700 meters	Not recorded in vicinity[2].	No suitable habitat; rocky loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Eucnide rupestris	Losaceae	Rock nettle	None/None/List B/2.2	Sonoran desert scrub/annual herb/December–April/500–600 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Ayenia compacta	Malvaceae	California ayenia	None/None/List B/2.3	Mojavean desert scrub, Sonoran desert scrub; rocky/perennial herb/March–April/150–1,095 meters	Not recorded in vicinity[2].	Suitable rocky loam soils but no suitable habitat. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in vicinity[2].
Fremontodendron mexicanum	Malvaceae	Mexican flannelbush	FE/SR/List A/1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland; gabbroic, metavolcanic, or serpentintite/evergreen shrub/March–June/10–716 meters	Recorded within surrounding Barrett Lake, Dulzura and Jamul Mountains quadrangles.	Suitable chaparral habitat but no suitable soils on site. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Herissantia crispa	Malvaceae	Curly herissantia	None/None/List B/2.3	Sonoran desert scrub/annual-perennial herb/August–September/700–725 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Horsfordia newberryi	Malvaceae	Newberry's velvet-mallow	None/None/List D/4.3	Sonoran desert scrub; rocky/shrub/February–December/3–800 meters	Not recorded in vicinity[2].	No suitable habitat but rocky loam on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Malacothamnus aboriginum	Malvaceae	Indian Valley bush mallow	None/None/List A/1B.2	Chaparral, cismontane woodland; rocky, granitic, often in burned areas/deciduous shrub/April–October/150–1,700 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils. Within elevation range. Not recorded in the vicinity[2].
Proboscidea althaeifolia	Martyniaceae	Desert unicorn-plant	None/None/List D/4.3	Sonoran desert scrub; sandy/perennial herb/May – August/150–1,000 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Within elevation range.	Not expected to occur. Desert species. No suitable habitat on site. Not recorded in the vicinity[2].
Calandrinia breweri	Montiaceae	Brewer's calindrinia	None/None/List D/4.2	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/March–June/10–1,220 meters	Not recorded in vicinity[2].	Suitable habitat and sandy loam on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Cistanthe [=*Calandrinia*] *maritima*	Montiaceae	Seaside cistanthe (calindrinia)	None/None/List D/4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/March–June/5–300 meters	Not recorded in vicinity[2].	Suitable habitat and sandy loam soils on site. Within elevation range.	Moderate potential to occur. Suitable soils and habitat. Within elevation range. Not recorded in the vicinity[2].
Lewisia brachycalyx	Montiaceae	Southwestern bitterroot	None/None/List B/2.2	Lower montane coniferous forest, meadows and seeps; mesic/perennial herb/February–June/1,370–2,300 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Triquetrella californica	N/A	Coastal triquetrella	None/None/ None/1B.2	Coastal bluff scrub, coastal scrub; soil/moss/10–100 meters	Recorded within surrounding San Vicente Reservoir.	Suitable habitat on site. Outside elevation range. Most other records for this species are from Northern California.	Low potential to occur. Suitable habitat on site. Outside elevation range. Recorded in the vicinity[2].
Mirabilis tenuiloba	Nycaginaceae	Slender-lobed four o'clock	None/None/List D/4.3	Sonoran desert scrub/perennial herb/March–May/300–1,095 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Within elevation range.	Not expected to occur. Desert species. No suitable habitat on site. Not recorded in the vicinity[2].
Abronia maritima	Nyctaginaceae	Red sand-verbena	None/None/List D/4.2	Coastal dunes/perennial herb/February–November/0–100 meters	Not recorded in vicinity[2].	No suitable coastal dune habitat; no preferred soil types included in species description. Outside elevation range.	Not expected to occur. No suitable habitat. Outside elevation range. Not recorded in vicinity[2].
Abronia villosa var. *aurita*	Nyctaginaceae	Chaparral sand-verbena	None/None/List A/1B.1	Chaparral, coastal scrub, desert dunes; sandy/annual herb/January–September/75–1,600 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy soils. Within elevation range.	Low potential to occur. Suitable habitat and soils present. Within elevation range. Not recorded in vicinity[2].
Fraxinus parryi	Oleaceae	Chaparral ash	None/None/ None/2.2	Chaparral/perennial shrub/March–May/213–620 meters	Recorded within surrounding Dulzura quadrangle.	Suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. Suitable habitat on site. Only known from one population within San Diego County (Reiser 1994). Within elevation range. Recorded in vicinity[2].
Camissonia lewisii	Onagraceae	Lewis's evening primrose	None/None/List C/3	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/March–May/0–300 meters	Recorded within surrounding Jamul Mountains quadrangle.	No suitable habitat but sandy loam soils on site. Within elevation range.	Low potential to occur. No suitable habitat but suitable soils on site. Within elevation range. Recorded in the vicinity[2].
Clarkia delicata	Onagraceae	Delicate clarkia	None/None/List A/1B.2	Chaparral, cismontane woodland; often gabbroic/annual herb/April–June/235–1,000 meters	Recorded within Alpine and surrounding Barrett Lake, Dulzura, Jamul Mountains, Tule Springs, Viejas Mountain, El Cajon Mountain, San Vicente Reservoir, and El Cajon quadrangles.	Suitable chaparral habitat but no gabbroic soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in vicinity[2].
Ophioglossum californicum	Ophioglossaceae	California adder's-tongue	None/None/List D/4.2	Chaparral, valley and foothill grassland, vernal pools (margins); mesic/rhizomatous herb/January–June/60–525 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and mesic areas. Within elevation range.	Moderate potential to occur. Suitable habitat and mesic areas on site. Within elevation range. Not recorded in the vicinity[2].
Piperia cooperi	Orchidaceae	Cooper's rein orchid	None/None/List D/4.2	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/March–June/15–1,585 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; no preferred soils identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Piperia leptopetala	Orchidaceae	Narrow-petaled rein orchid	None/None/List D/4.3	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest/perennial herb/May–July/380–2,225 meters	Not recorded in vicinity[2].	No suitable habitat or soils on site. Within elevation range.	Not expected to occur. No suitable habitat or soils on site. Within elevation range. Not recorded in the vicinity[2].
Chloropyron maritimum ssp. *maritimum* [=*Cordylanthus maritimus* ssp. *maritimus*]	Orobanchaceae	Salt marsh bird's-beak	FE/SE/List A, MSCP/1B.2	Coastal dunes, coastal saltwater marshes and swamps/annual herb hemiparasitic/May–October/0–30 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Above elevation range.	Not expected to occur. Coastal species. No suitable habitat. Above elevation range. Not recorded in the vicinity[2].
Dicranostegia orcuttiana [=*Cordylanthus orcuttianus*]	Orobanchaceae	Orcutt's bird's-beak	None/None/List B, MSCP/2.1	Coastal scrub/annual herb hemiparasitic/April–June/10–350 meters	Recorded within surrounding Jamul Mountains quadrangle.	Suitable coastal scrub habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in vicinity[2].
Orobanche parishii ssp. *brachyloba*	Orobanchaceae	Short-lobed broomrape	None/None/List D/4.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb parasitic/April–October/3–305 meters	Not recorded in vicinity[2].	Suitable coastal scrub habitat on site. Sandy loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2].
Cordylanthus parviflorus	Orobranchaceae	Small-flowered bird's beak	None/None/None/2.3	Joshua tree woodland, Mojavean desert scrub, pinyon and desert woodland/annual herb hemiparasitic/August–October/700–2,200 meters	Recorded within surrounding Dulzura quadrangle.	No suitable habitat; preferred soils not identified for this species. Below elevation range.	Low potential to occur. No suitable habitat on site. Below elevation range. Recorded in vicinity[2].
Romneya coulteri	Papaveraceae	Coulter's matilija poppy	None/None/List D/4.2	Chaparral, coastal scrub; often in burns/rhizomatous herb/March–July/20–1,200 meters	Not recorded in vicinity[2].	Suitable habitat on site, but habitat has generally recovered from recent burns. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Mimulus aurianticus var. *aridus*	Phrymaceae	Desert monkey flower	None/None/List D/4.3	Chaparral, rocky; Sonoran desert scrub/evergreen shrub/April–July/750–1,200 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam within Sycamore South Study Area. Below elevation range.	Low potential to occur. Suitable habitat and soils. Below elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Mimulus clevelandii	Phrymaceae	Cleveland's monkeyflower	None/None/List D/4.2	Chaparral, cismontane woodland, lower montane coniferous forest; gabbroic, often in disturbed areas, openings, rocky/rhizomatous herb/April–July/450–2,000 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam within Sycamore South Study Area. Slightly below elevation range.	Moderate potential to occur. Suitable habitat and soils. Slightly below elevation range. Not recorded in the vicinity[2].
Mimulus palmeri [=*diffusus*]	Phrymaceae	Palomar monkeyflower	None/None/List D/4.3	Chaparral, lower montane coniferous forest; sandy or gravelly/annual herb/April–June/1,220–1,830 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy loam soils on site. Below elevation range.	Not expected to occur. Suitable habitat and soils, but well below elevation range. Not recorded in the vicinity[2].
Mimulus latidens	Phrymaceae	Vernal pool monkeyflower	None/None/List A/considered but rejected	Valley grassland, foothill woodland, wetland-riparian/annual herb/April–July/0–2,500 meters	Not recorded in vicinity[2].	Suitable riparian habitat; preferred soils not identified for this species. Within elevation range.	Low potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Tetracoccus dioicus	Picrodendraceae	Parry's tetracoccus	None/None/List A, MSCP/1B.2	Chaparral, coastal sage scrub/deciduous shrub/April–May/165–1,000 meters	Recorded within Alpine and surrounding Barrett Lake, Dulzura, Jamul Mountains, El Cajon Mountain, and El Cajon quadrangles.	Suitable chaparral habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Pinus torreyana ssp. *torreyana*	Pinaceae	Torrey pine	None/None/List A, MSCP/1B.2	Closed-cone coniferous forest, chaparral; sandstone/evergreen tree/NA/75–160 meters	Not recorded in vicinity[2].	No suitable habitat or soils. Outside elevation range.	Not expected to occur. No suitable habitat or soils. Outside elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Penstemon clevelandii var. *connatus*	Plantaginaceae	San Jacinto beardtongue	None/None/List D/4.3	Chaparral, pinyon and juniper woodland, Sonoran desert scrub; rocky/perennial herb/March–May/400–1,500 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Slightly within elevation range.	Low potential to occur. Suitable habitat and soils on site. Slightly within elevation range. Not recorded in the vicinity[2].
Penstemon thurberi	Plantaginaceae	Thurber's beardtongue	None/None/List D/4.2	Chaparral, Joshua tree "woodland," pinyon and juniper woodland, Sonoran desert scrub/perennial herb/May–July/500–1,220 meters	Not recorded in vicinity[2].	Suitable chaparral habitat on site; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Stemodia durantifolia	Plantaginaceae	Purple stemodia	None/None/List B/2.1	Sonoran desert scrub (often mesic, sandy)/perennial herb/January–December/180–300 meters	Recorded within surrounding Dulzura and Jamul Mountains quadrangles.	No suitable habitat but sandy soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Recorded in the vicinity[2].
Calamagrostis densa	Poaceae	Tufted pine grass	None/None/MSCP/None	Chaparral/perennial herb/June–August/0–2,300 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Hordeum intercedens	Poaceae	Vernal barley	None/None/List C/3.2	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/annual herb/March–June/5–1,000 meters	Not recorded in vicinity[2].	No suitable vernal pool habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Not recorded in the vicinity[2].
Orcuttia californica	Poaceae	California Orcutt grass	FE/SE/List A, MSCP/1B.1	Vernal pools/annual herb/April–August/15–660 meters	Recorded within surrounding Barrett Lake and Jamul Mountains quadrangle.	No vernal pools on site. Within elevation range.	Low potential to occur. No vernal pools on site. Within elevation range. Recorded in the vicinity[2].
Poa atropurpurea	Poaceae	San Bernardino bluegrass	FE/None/List A/1B.2	Meadows and seeps; mesic/rhizomatous herb/May–July/1,360–2,455 meters	Not recorded in vicinity[2].	No suitable habitat or soils on site. Below elevation range.	Not expected to occur. No suitable habitat or soils on site. Below elevation range. Not recorded in the vicinity[2].
Sphenopholis obtusata	Poaceae	Prairie wedge grass	None/None/ None/2.2	Cismontane woodland, meadows and seeps; mesic/perennial herb/April–July/300–2,000 meters	Not recorded in vicinity[2].	No suitable habitat but mesic regions on site. Within elevation range.	Low potential to occur. No suitable habitat but mesic regions on site. Within elevation range. Not recorded in vicinity[2].
Stipa [=*Achnatherum*] *diegoensis*	Poaceae	San Diego County needlegrass	None/None/List D/4.2	Chaparral, coastal scrub; rocky, often mesic/perennial herb/February–June/10–800 meters	Not recorded in vicinity[2].	Suitable habitat and rocky loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils. Within elevation range. Not recorded in the vicinity[2].
Ipomopsis tenuifolia	Polemoniaceae	Slender-leaved ipomopsis	None/None/List B/2.3	Chaparral, pinyon and juniper woodland, Sonoran desert scrub; gravelly or rocky/perennial herb/March–May/100–1,200 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Within elevation range.	Low potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2].
Leptosiphon (=Linanthus) floribundus ssp. *hallii*	Polemoniaceae	Santa Rosa Mountain leptosiphon (linanthus)	None/None/List A/1B.3	Pinyon and juniper woodland, Sonoran desert scrub/perennial herb/May–July/1,000–2,000 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Linanthus bellus	Polemoniaceae	Desert beauty	None/None/List B/2.3	Chaparral; sandy/annual herb/April–May/1,000–1,400 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils. Below elevation range. Not recorded in the vicinity[2].
Linanthus orcuttii	Polemoniaceae	Orcutt's linanthus	None/None/List A/1B.3	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; openings/annual herb/May–June/915–2,145 meters	Recorded within surrounding Tule Springs quadrangle.	Suitable chaparral habitat and openings. Preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat present. Below elevation range. Recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Navarretia fossalis	Polemoniaceae	Spreading navarretia	FT/None/List A, MSCP/1B.1	Chenopod scrub, shallow freshwater marsh and swamps, playas, vernal pools/annual herb/April–June/30–655 meters	Recorded within surrounding Jamul Mountains quadrangle.	No suitable wetland habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Recorded in the vicinity[2].
Navarretia peninsularis	Polemoniaceae	Peninsular navarretia	None/None/List A/1B.2	Chaparral (openings). lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland; mesic/annual herb/June–August/1,500–2,300 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and mesic areas. Below elevation range.	Low potential to occur. Suitable habitat and mesic areas present. Below elevation range. Not recorded in the vicinity[2].
Navarretia prostrata	Polemoniaceae	Prostrate navarretia	None/None/List A/1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools; mesic/annual herb/April–July/15–1,210 meters	Not recorded in vicinity[2].	Suitable coastal scrub habitat and mesic areas. Within elevation range. More commonly associated with vernal pools.	Low potential to occur Suitable habitat and mesic areas, but no vernal pools. Within elevation range. Not recorded in the vicinity[2].
Saltugilia [=*Gilia*] *caruifolia*	Polemoniaceae	Caraway-leaved gilia	None/None/List D/4.3	Chaparral, lower montane coniferous forest; sandy, openings/annual herb/May–August/840–2,300 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils on site. Below elevation range. Not recorded in the vicinity[2].
Polygala cornuta var. *fishiae*	Polygalaceae	Fish's milkwort	None/None/List D/4.3	Chaparral, cismontane woodland, riparian woodland/deciduous shrub/May–August/100–1,000 meters	Not recorded in vicinity[2].	Suitable chaparral habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. Suitable habitat on site. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Chorizanthe leptotheca	Polygonaceae	Peninsular spineflower	None/None/List D/4.2	Chaparral, coastal scrub, lower montane conifer forest; alluvial fan, granitic/annual herb/May–August/300–1,900 meters	Not recorded in vicinity[2].	Suitable habitat but no alluvial fans or granitic soils present. Within elevation range.	Moderate potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Not recorded in the vicinity[2].
Chorizanthe orcuttiana	Polygonaceae	Orcutt's spineflower	FE/SE/List A/1B.1	Maritime chaparral, closed-cone coniferous forest, coastal scrub; sandy openings/annual herb/March–May/3–125 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Outside elevation range.	Low potential to occur. Suitable soils but no suitable habitats. Outside elevation range. Not recorded in the vicinity[2].
Chorizanthe parryi var. *fernandina*	Polygonaceae	San Fernando Valley spineflower	FC/SE/List A/1B.1	Coastal scrub; sandy; valley and foothill grassland/annual herb/April–June/150–1,220 meters	Not recorded in vicinity[2].	Suitable habitat and sandy loam soils on site. Within elevation range.	Not expected to occur. Not recorded in the vicinity[2]. No records from San Diego County (CNPS 2012).
Chorizanthe polygonoides var. *longispina*	Polygonaceae	Long-spined spineflower	None/None/List A/1B.2	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay/annual herb/April–July/30–1,530 meters	Recorded within surrounding Barrett Lake, Viejas Mountain, El Cajon Mountain, and El Cajon quadrangles.	Suitable habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2].
Mucronea californica	Polygonaceae	California spineflower	None/None/List D/4.2	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy/annual herb/March–July/0–1,400 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and sandy loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Nemacaulis denudata var. *denudata*	Polygonaceae	Coast woolly-heads	None/None/List A/1B.2	Coastal dunes/annual herb/April–September/0–100 meters	Not recorded in vicinity[2].	No coastal dune habitats. Outside elevation range.	Not expected to occur. No suitable habitat. Outside elevation range. Not recorded in the vicinity[2].
Nemacaulis denudata var. *gracilis*	Polygonaceae	Slender woolly-heads	None/None/List B/2.2	Coastal dunes, desert dunes, Sonoran desert scrub/annual herb/April–May/50–400 meters	Not recorded in vicinity[2].	No coastal dune habitats. Within elevation range.	Low potential to occur. No suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Androsace elongata ssp. *acuta*	Primulaceae	California androsace	None/None/List D/4.2	Chaparral, coastal scrub, cismontane woodland, valley and foothill grassland, meadows and seeps, pinyon and juniper woodland/annual herb/March–June/150–1,200 meters	Not recorded in vicinity[2].	Suitable habitat; no preferred soil types included in species description. Within elevation range.	Low potential to occur. Suitable habitat on site. Within elevation range. Not recorded in vicinity[2]. Very rare in Southern California (CNPS 2012).
Delphinium hesperium ssp. *cuyamacae*	Ranunculaceae	Cuyamaca larkspur	None/SR/List A/1B.2	Lower montane coniferous forest, meadows and seeps, vernal pools; mesic areas/perennial herb/May–July/1,220–1,631 meters	Not recorded in vicinity[2].	No suitable habitat or mesic areas. Below elevation range.	Not expected to occur. No suitable habitat or soils. Below elevation range. Not recorded in the vicinity[2].
Delphinium parishii ssp. *subglobosum*	Ranunculaceae	Colorado Desert larkspur	None/None/List D/4.3	Chaparral, cismontane woodland, pinyon and juniper woodland, Sonoran desert scrub/perennial herb/March–June/600–1,800 meters	Not recorded in vicinity[2].	Suitable habitat present; preferred soils not identified for this species. Below elevation range.	Low potential to occur. Suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].
Myosurus minimus ssp. *apus*	Ranunculaceae	Little mousetail	None/None/List C/3.1	Valley and foothill grassland, vernal pools (alkaline)/annual herb/March–June/20–640 meters	Recorded within surrounding Dulzura and Jamul Mountains quadrangle.	No suitable grassland, vernal pools, or alkaline soils on site. Within elevation range.	Low potential to occur. No suitable habitat or soils on site. Within elevation range. Recorded in the vicinity[2].
Adolphia californica	Rhamnaceae	California adolphia	None/None/List B/2.1	Chaparral, coastal scrub, valley and foothill grassland; clay/deciduous shrub/December–May/45– 740 meters	Recorded within surrounding Jamul Mountains quadrangle.	Suitable chaparral habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in vicinity[2]. Would likely have been detected during surveys if present.
Ceanothus cyaneus	Rhamnaceae	Lakeside ceanothus	None/None/List A, MSCP/1B.2	Closed-cone coniferous forest, chaparral/evergreen shrub/April–June/235–755 meters	Recorded within Alpine and surrounding Dulzura, El Cajon Mountain, San Vicente Reservoir, and El Cajon quadrangles.	Suitable chaparral habitat; no preferred soils identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Ceanothus otayensis	Rhamnaceae	Otay Mountain ceanothus	None/None/None/1B.2	Chaparral; metavolcanic or gabbroic/perennial evergreen shrub/January–April/600–1,100 meters	Recorded within surrounding Dulzura and Jamul Mountains quadrangles.	Suitable habitat but no suitable metavolcanic or gabbroic soils on site. Below elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Below elevation range. Recorded in vicinity[2]. Would likely have been detected during surveys if present.
Ceanothus verrucosus	Rhamnaceae	Wart-stemmed ceanothus	None/None/List B, MSCP/2.2	Chaparral/evergreen shrub/December–May/1–380 meters	Recorded within El Cajon Mountain quadrangle.	Suitable chaparral habitat; no preferred soils identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Colubrina californica	Rhamnaceae	Las Animas colubrina	None/None/List B/2.3	Mojavean desert scrub, Sonoran desert scrub/deciduous shrub/April–June/10–1,000 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Chamaebatia australis	Rosaceae	Southern mountain misery	None/None/List D/4.2.	Chaparral; gabbroic or metavolcanic/evergreen shrub/November–May/300–1,020 meters	Not recorded in vicinity[2].	Suitable chaparral but no suitable gabbroic or metavolcanic soils on site. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Horkelia cuneata ssp. *puberula*	Rosaceae	Mesa horkelia	None/None/List A/1B.1	Maritime chaparral, cismontane woodland, coastal scrub; sandy or gravelly/perennial herb/February–July/70–810 meters	Not recorded in vicinity[2].	Suitable habitat on site and sandy loam soils on site. Within elevation range.	Moderate potential to occur. Suitable soils and habitat on site. Within elevation range. Not recorded in the vicinity[2].
Horkelia truncata	Rosaceae	Ramona horkelia	None/None/List A/1B.3	Chaparral/cismontane woodland; clay, gabbroic/perennial herb/May–June/400–1,300 meters	Recorded within Alpine and surrounding Barrett Lake, Dulzura, Tule Springs, Viejas Mountain, EL Cajon Mountain, San Vicente Reservoir, and El Cajon quadrangles.	Suitable chaparral habitat but no clay or gabbroic soils on site. Slightly within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Slightly within elevation range. Recorded in the vicinity[2].
Rosa minutifolia	Rosaceae	Small-leaved rose	None/SE/List B, MSCP/2.1	Chaparral, coastal scrub/deciduous shrub/January–June/150–160 meters	Not recorded in vicinity[2].	Suitable habitat; preferred soils not identified for this species. Outside elevation range.	Low potential to occur. Suitable habitat on site. Outside elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Rubus glaucifolius var. *ganderi*	Rosaceae	Cuyamaca raspberry	None/None/List A/1B.3	Lower montane coniferous forest; gabbroic/evergreen shrub/May–June/1,200–1,675 meters	Not recorded in vicinity[2].	No suitable habitat or gabbroic soils. Below elevation range.	Not expected to occur. No suitable habitat or soils. Below elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Galium angustifolium ssp. *borregoense*	Rubiaceae	Borrego beadstraw	None/SR/List A/1B.3	Sonoran desert scrub; rocky/perennial herb/March/350–1,250 meters	Not recorded in vicinity[2].	No suitable habitat but rocky loam soils on site. Within elevation range.	Low potential to occur. Suitable soils but no suitable habitat. Within elevation range. Not recorded in the vicinity[2].
Galium angustifolium ssp. *jacinticum*	Rubiaceae	San Jacinto Mountains bedstraw	None/None/List A/1B.3	Lower montane coniferous forest/perennial herb/June–August/1,350–2,100 meters	Not recorded in vicinity[2].	No suitable habitat; preferred soils not identified for this species. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Galium johnstonii	Rubiaceae	Johnston's bedstraw	None/None/List D/4.3	Chaparral, lower montane coniferous forest, pinyon-juniper woodland, riparian woodland/perennial herb/June–July/1,220–2,300 meters	Not recorded in vicinity[2].	Suitable habitat; preferred soils not identified for this species. Below elevation range.	Not expected to occur. Below elevation range. Not recorded in the vicinity[2].
Galium proliferum	Rubiaceae	Desert bedstraw	None/None/ None/2.2	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; rocky, carbonate/annual herb/March–June/1,190–1,630 meters	Recorded within surrounding Jamul Mountains quadrangle.	No suitable habitat or carbonate soils. Below elevation range.	Not expected to occur. No suitable habitat or soils on site. Below elevation range.
Nolina cismontana	Ruscaceae	Chaparral beargrass	None/None/List A/1B.2	Chaparral, coastal scrub/; sandstone or gabbro/evergreen shrub/May–July/140–1,275 meters	Recorded within surrounding Viejas Mountain quadrangle.	Suitable chaparral habitat on site but no sandstone or gabbro soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Nolina interrata	Ruscaceae	Dehesa nolina	None/SE/List A, MSCP/1B.1	Chaparral, gabbroic or serpentinite soils/perennial herb/June–July/185–855 meters	Recorded within Alpine and surrounding Barrett Lake, Dulzura, and Jamul Mountains quadrangle.	Suitable chaparral habitat but no serpentinite soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Heuchera brevistaminea	Saxifragaceae	Mt. Laguna alumroot	None/None/List A/1B.3	Broadleafed upland forest, chaparral, cismontane woodland, riparian forest; rocky/rhizomatous herb/April–July/1,370–2,000 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils. Below elevation range. Not recorded in the vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Heuchera rubescens var. *versicolor*	Saxifragaceae	San Diego County alumroot	None/None/List B/2.3	Chaparral, lower montane coniferous forest; rocky/rhizomatous herb/May–June/1,500–4,000 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Below elevation range.	Low potential to occur. Suitable habitat and soils. Below elevation range. Not recorded in the vicinity[2].
Selaginella asprella	Selaginellaceae	Bluish spike-moss	None/None/List D/4.3	Cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, upper montane coniferous forest; granitic, rocky/rhizomatous herb/July/1,600–2,700 meters	Not recorded in vicinity[2].	No suitable habitat but suitable rocky loam soils on site. Below elevation range.	Not expected to occur. No suitable habitat. Below elevation range. Not recorded in the vicinity[2].
Selaginella cinerascens	Selaginellaceae	Ashy spike-moss	None/None/List D/4.1	Chaparral, coastal scrub/rhizomatous herb/Not listed/20–640 meters	Not recorded in vicinity[2].	Suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2].
Selaginella eremophila	Selaginellaceae	Desert spike-moss	None/None/List B/2.2	Chaparral, Sonoran desert scrub; gravelly or rocky/rhizomatous herb/June/200–900 meters	Not recorded in vicinity[2].	Suitable chaparral habitat and rocky loam soils on site. Within elevation range.	Moderate potential to occur. Suitable habitat and soils on site. Within elevation range. Not recorded in the vicinity[2].
Lycium californicum	Solanaceae	California box-thorn	None/None/List D/4.2	Coastal bluff scrub, coastal scrub/shrub/(Dec) March–August/5–150 meters	Not recorded in vicinity[2].	Moderately suitable coastal scrub habitat; preferred soils not identified for this species. Outside elevation range.	Not expected to occur. Outside elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Lycium parishii	Solanaceae	Parish's desert-thorn	None/None/List B/2.3	Coastal scrub, Sonoran desert scrub/shrub/March–April/305–1,000 meters	Not recorded in vicinity[2].	Moderately suitable coastal scrub habitat; preferred soils not identified for this species. Within elevation range.	Low potential to occur. Suitable habitat on site. Within elevation range. Not recorded in the vicinity[2]. Would likely have been detected during surveys if present.
Solanum tenuilobatum	Solanaceae	Chaparral nightshade	None/None/ MSCP/None	Forest, northern oak woodland, southern oak woodland, foothill woodland, chaparral/perennial herb/February–July/0–2,743 meters	Not recorded in vicinity[2].	Suitable chaparral habitat; preferred soils not identified for this species. Within elevation range.	Moderate potential to occur. Suitable habitat. Synonymous species, *S. xanti*, was recorded within the Preserve. Not recorded in the vicinity[2].
Geothallus tuberosus	Sphaerocarpaceae	Campbell's liverwort	None/None/ None/1B.1	Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/NA/10–600 meters	Not recorded in vicinity[2].	No suitable habitat on site; preferred soils not identified for this species. Within elevation range.	Low potential to occur. No suitable habitat on site. Within elevation range. Not recorded in vicinity[2].
Bloomeria [=*Muilla*] *clevelandii*	Themidaceae	San Diego goldenstar	None/None/List A, MSCP/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/bulbiferous herb/April-May/50–465 meters	Recorded within Alpine and surrounding Dulzura, Jamul Mountains, San Vicente Reservoir, El Cajon quadrangles.	Suitable habitat but no clay soils. Within elevation range.	Moderate potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in the vicinity[2].
Brodiaea filifolia	Themidaceae	Thread-leaved brodiaea	FT/SE/List A, MSCP/1B.1	Chaparral (openings) coastal scrub, cismontane woodland, playas, valley and foothill grassland, vernal pools; often clay/bulbiferous herb/March–June/25–1,120 meters	Not recorded in vicinity[2].	Suitable chaparral habitat but no clay soils. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Not recorded in vicinity[2].

Scientific Name	Family	Common Name	Sensitivity Code & Status (Federal/State/County/ CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevational Range	Known occurrences (CNDDB/CNPS)	Suitable Habitat/Soils/Elevation	Status On Site or Potential to Occur
Brodiaea orcuttii	Themidaceae	Orcutt's brodiaea	None/None/List A, MSCP/1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay, sometimes serpentine/bulbiferous herb/May–July/30–1,692 meters	Recorded within Alpine and surrounding El Cajon, San Vicente Reservoir, El Cajon Mountain, Barrett Lake, Dulzura, and Jamul Mountains quadrangles.	Suitable chaparral habitat but no mesic, clay, or serpentine soils on site. Within elevation range.	Low potential to occur. Suitable habitat but no suitable soils on site. Within elevation range. Recorded in vicinity[2].
Viola purpurea ssp. *aurea*	Violaceae	Golden violet	None/None/List B/2.2	Great Basin scrub, pinyon and juniper woodland; sandy/perennial herb/April–June/1,000–2,040 meters	Not recorded in vicinity[2].	No suitable habitat but sandy loam soils on site. Below elevation range.	Low potential to occur. Suitable soils but no suitable habitat on site. Below elevation range. Not recorded in the vicinity[2].

[1]Status –
Federal:
FE: Federally-listed as Endangered
FT: Federally-listed as Threatened
FC: Federal Candidate

State:
SE: State-listed as Endangered
ST: State-listed as Threatened
SR: State-listed as Rare

CRPR (California Rare Plant Rank):
1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2 Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 Plants About Which We Need More Information - A Review List
4 Plants of Limited Distribution - A Watch List

Threat Ranks
0.1 Seriously threatened in California
0.2 Fairly threatened in California
0.3 Not very threatened in California

County Status
County List A Plants that are rare, threatened or endangered in California and elsewhere
County List B Plants that are rare, threatened in California but more common elsewhere
County List C Plants which may be quite rare, but need more information to determine their true rarity status
County List D Plants of limited distribution and are uncommon, but not presently rare or endangered

MSCP: Covered species under the MSCP

[2]Vicinity: The Alpine USGS quadrangle and surrounding quadrangles: Dulzura, Jamul Mountains, Tule Springs, Viejas Mountain, Barrett Lake, El Cajon Mountain, San Vicente Reservoir, and El Cajon.

APPENDIX E

Special-Status Wildlife Species Detected or Potentially Occurring

APPENDIX E
Sensitive Wildlife Species Detected or Potentially Occurring at Stoneridge Preserve

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Amphibians					
Frogs					
Rana draytoni California red-legged frog	FT/CSC/Group 1, MSCP	Lowland or foothill streams, wetlands, riparian woodlands; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water from Coast Ranges south of Mendocino Co., and in portions of Sierra Nevada and Cascades ranges, sea level to 1,525 meters (1, 2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Thought to be extirpated within County. No suitable habitat within Preserve.
Rana muscosa Southern mountain yellow-legged frog	FE/CE, CSC/Group 1	Meadow streams, isolated pools, lake borders, rocky stream courses within ponderosa pine, montane hardwood-conifer and montane riparian habitat types in southern Sierra Nevada; and rocky streams in narrow canyons and in chaparral in Southern California. Elevations 370–3,660 meters (1, 2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Thought to be extirpated within County. No suitable habitat within Preserve.
Salamanders/Newts					
Batrachoseps major aridus Desert slender salamander	FE/SE/Group 1	Known only from Hidden Palm Canyon and Guadalupe Canyon in Santa Rosa Mountains., Riverside Co., approximately 850 meters, in barren, palm oasis, desert wash, and desert scrub. Occurs under limestone sheets, rocks, and talus, usually at the base of damp, shaded, north and west-facing walls (1).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat.
Ensatina eschscholtzii klauberi Large-blotched salamander	None/CSC/Group 1	Moist shaded evergreen and deciduous forests, oak woodlands, under rocks, logs, debris, especially peeled off bark. Found in peninsular ranges of southern California and eastern San Bernardino Mountains., approx. 1,525 meters (1).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Taricha torosa torosa Coast Range newt (Monterey Co. south only)	None/CSC/Group 2	Valley-foothill hardwood, valley-foothill hardwood-conifer, coastal scrub, mixed chaparral, annual grassland, mixed conifer; in Southern California inhabits drier chaparral, oak woodland, and grasslands. Found along Coast Ranges south of Monterey Co. to northern San Diego Co., Peninsular Ranges south to Boulder Creek, Sierra Nevada foothills, Shasta Reservoir, Central Valley floor, 0–1,830 meters (1, 2).	No	Low potential to occur.	No suitable habitat on site. Recorded in the vicinity[2]. Outside of known range.
Toads					
Anaxyrus [=Bufo microscaphus] californicus Arroyo toad	FE/CSC/ Group 1, MSCP	Washes, arroyos, sandy riverbanks, riparian areas with willows, sycamores, oaks cottonwoods. Requires exposed sandy streamsides with stable terraces to burrow with scattered vegetation and calm pools with sandy/gravel bottoms for breeding. Found west of desert in coastal areas from upper Salinas River in San Luis Obispo Co. to northwestern Baja California, sea level to 900 meters (1).	No	Low potential to occur.	Moderately suitable habitat with suitable substrates but too dense of surrounding riparian vegetation for this species. Recorded in the vicinity[2].
Spea [=Scaphiopus] hammondi Western spadefoot	None/CSC/ Group 2	Sandy/gravelly soils within mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, foothills, mountains, and other habitats. Breed in rainpools that do not have bullfrogs, fish, or crayfish. Found throughout Great Valley and foothills south of Redding, throughout South Coast Ranges in Southern California south of Transverse Mountains. and west of Peninsular Mountains., 0–1,365 meters (1).	No	Low potential to occur.	Suitable habitat on site but no suitable sandy or gravelly soils. Bullfrogs most likely in the vicinity. Recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Reptiles					
Geckos					
Coleonyx switaki Barefoot gecko	None/ST/Group 2	Arid rocky areas at the heads of canyons with large boulders and rock outcrops, sparse vegetation. Found on arid desert slopes of eastern side of Peninsular Ranges near Borrego Springs south to Baja California. Isolated population found in Coyote Mountains. of Imperial Co. Elevations 0–700 meters (1, 2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat.
Coleonyx variegatus abbotti San Diego banded gecko	None/None/ Group 1	Rocky areas in coastal sage and chaparral, and occurs most often in granite or rocky outcrops in coastal and cismontane Southern California from interior Ventura Co. south, and is absent from extreme outer coast (1, 2).	Yes	Recorded on site.	Captured during herpetological array surveys. Recorded in the vicinity[2].
Lizards					
Anniella pulchra pulchra Silvery legless lizard	None/CSC/ Group 2	Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats (1).	No	Moderate potential to occur.	Suitable coastal sage scrub and riparian habitat on site for this species but no loose soils. Sufficient leaf litter found in understory of oak riparian woodlands. Recorded in the vicinity[2].
Aspidoscelis hyperythra beldingi Orange-throated whiptail	None/CSC/ Group 2, MSCP	Coastal sage scrub, chamise-redshank chaparral, mixed chaparral, valley-foothill hardwood especially in areas with summer fog. Found from Santa Ana River and near Colton in San Bernardino Co., west of Peninsular ranges, south throughout Baja California, 0–610 meters (1, 2).	Yes	Recorded on site.	Suitable coastal sage scrub habitat for this species. Recorded in the vicinity[2]. Observed during general biological surveys and in focused herpetological array surveys.
Aspidoscelis tigris stejnegeri Coastal western whiptail	None/None/ Group 2	Hot and dry open areas with sparse foliage, chaparral, woodland, riparian areas. Found in coastal Southern California, west of Peninsular Ranges and south of Transverse Ranges, north to Ventura Co., 0–2,130 meters (1, 2).	Yes	Recorded on site.	Suitable coastal sage scrub habitat for this species. Recorded in the vicinity[2]. Observed during general biological surveys and in focused herpetological array surveys.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Eumeces skiltonianus interparietalis Coronado Island skink	None/CSC/ Group 2	Grassland, woodlands, pine forests, chaparral, especially open sunny areas such as clearings and edges of creeks, and rocky areas near streams with lots of vegetation; in litter, rotting logs, under flat stones. Found in coastal ranges and Sierra Nevada and foothills, 0–2,530 meters (1, 2).	No	Low potential to occur.	No suitable rocky areas near streams for this species. Very little litter or other microhabitat for this species. Recorded in the vicinity[2].
Phrynosoma blainvillei ssp. *coronatum* Coast horned lizard	None /CSC/ Group 2, MSCP	Areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. Annual grassland, chaparral, woodland, coniferous forest, sandy areas, frequently near ant hills. Foothills and coastal plains from Los Angeles to northern Baja California (1, 3).	Yes	Recorded on site.	Suitable sandy soils and chaparral habitat on site. Recorded in the vicinity[2].
Phrynosoma mcallii Flat-tailed horned lizard	None /CSC/ Group 1	Fine sand and sparse vegetation in desert washes and desert flats. It is probably most abundant in areas of creosote bush and is found in desert scrub, wash, succulent shrub, and alkali scrub habitats. Common in areas with high density of harvester ants and fine windblown sand, rarely occurs on dunes. Found in central Riverside, eastern San Diego and Imperial Cos., 0–180 meters (1, 2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat or soils.
Sauromalus ater Chuckwalla	None/None/ Group 2	Rocky flats and hillsides, lava flows, large outcrops, creosote bush habitats. Also inhabit man-made habitats such as piles of railroad ties and rip-rap. Found in Mojave and Colorado deserts from desert slopes of mountains, north through Owens Valley and east to Colorado River, 0–1,800 meters (1).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Sceloporus graciosus vanderburgianus Southern sagebrush lizard	None/None/ Group 2	Montane chaparral, manzanita, ceanothus; open pine and Douglas fir forests in mountains; found in areas with scattered low bushes, abundant sun. Transverse and Peninsular ranges of Southern California, Sierra San Pedro Martir of northern Baja California, 1,371–2,926 meters (1).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat.
Uma notata notata Colorado Desert fringe-toed lizard	None /CSC/ Group 1	Fine, loose, wind-blown sand dunes, dry lakebeds, sandy beaches or riverbanks, desert washes, and sparse desert scrub in Colorado and Sonoran deserts, 0–180 meters (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat.
Snakes					
Crotalus ruber ruber Northern red-diamond rattlesnake	None/CSC/ Group 2	Chaparral, oak and pine woodland, arid desert, rocky grassland habitats in rocky areas and dense vegetation; rocky desert flats on desert slopes of mountains. Morongo Valley (1).	Yes	Recorded on site.	Suitable chaparral habitat on site for this species. Recorded in the vicinity[2]. One individual was recorded west of the Preserve during a biological survey.
Diadophis punctatus similis San Diego ringneck snake	None /None/ Group 2	Moist habitats, wet meadows; rocky hillsides; open habitats such as farmland, grassland, chaparral; and mixed coniferous forests and woodlands. San Diego Co. along coast and Peninsular range, southwestern San Bernardino Co. (1).	No	Moderate potential to occur.	Moderately suitable moist habitat types on site. Recorded in the vicinity[2].
Lampropeltis zonata pulchra (San Diego population) San Diego mountain kingsnake	None /CSC/ Group 2	Valley-foothill hardwood, hardwood-conifer, mixed and montane chaparral, valley-foothill riparian, coniferous forests, wet meadows in central San Diego Co. peninsular ranges- Laguna, Palomar, Volcan, and Hot Springs Mountains., Santa Ana Mountains., and in Hollywood Hills, Santa Monica Mountains., 0–1,981 meters (1).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of known range. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Lichanura trivirgata roseofusca Coastal rosy boa	None /None/ Group 2	Rocky chaparral hillsides and canyons, scrub flats with good cover, common in riparian areas but does not require permanent water. Found in extreme Southern California within Tijuana River and Otay watersheds (1, 2).	No	High potential to occur.	Suitable chaparral and riparian areas for this species on site. Recorded in the vicinity[2].
Salvadora hexalepis virgultea Coast patch-nosed snake	None/CSC/ Group 2	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, plains from northern Carrizo Plains south through coastal zone, south and west of the deserts into coastal northern Baja California, at elevations below sea level to 2,130 meters (1).	Yes	Recorded on site.	Captured during herpetological array surveys. Recorded in the vicinity[2].
Thamnophis hammondii Two-striped garter snake	None /CSC/ Group 1	Permanent or semi-permanent bodies of water bordered by dense vegetation in rocky areas, oak woodland, chaparral, brushland, coniferous forest. Found on Diablo Range, South Coast and Transverse ranges, and Santa Catalina Island (1, 2).	No	Moderate potential to occur.	Few suitable water bodies found on site, mostly ephemeral. Recorded in the vicinity[2].
Thamnophis sirtalis ssp. South Coast garter snake	None/CSC/ Group 2	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools. Coastal plain from Ventura to San Diego Co., 0–850 meters (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Only known from San Luis Rey River in San Diego County.
Turtles					
Emys [=Actinemmys] marmorata pallida Western pond turtle	None /CSC/ Group 1, MSCP	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter. Found in coast ranges, central valley, 0–1,800 meters (1, 2).	No	Low potential to occur.	All water sources on site are ephemeral channels. No ponds on site. Recorded in the vicinity[2].
Birds					
Loons					
Gavia immer Common loon (nesting)	None/CSC/ Group 2	Estuarine and subtidal marine habitats along entire coast (September to May). Uncommon on large, deep lakes in valleys and foothills; common migrant along coast, including offshore, in November and May (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Oceanodroma furcata plumbea Fork-tailed storm petrel	None/CSC/ Group 2	Visitor on open ocean along the entire coast; found in bays and harbors particularly after storms. Breeds on islets in Del Norte and Humboldt Cos. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Oceanodroma homochroa Ashy storm petrel	None /CSC/ Group 2	Open sea. Nests in natural cavities and sea caves, mainly talus but also larger rock. Resident of offshore waters from Cape Mendocino to northern Baja California, Mexico. Breeds on offshore islands from Southeast Farallon Island to Los Coronados (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Oceanodroma melania Black storm petrel	None /CSC/ Group 2	Open sea from Monterey Bay south during April to October. Nests in burrows and rock cavities on Santa Barbara Island and Sutil Island (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Auks					
Cerorhinca monocerata Rhinoceros auklet (nesting colony)	None/WL/ Group 2	Marine pelagic waters. Nests in a burrow on undisturbed, forested or unforested islands, and probably in cliff caves. Found off northern and central California, and south of northern Channel Islands. Breeds off Del Norte and Humboldt Cos., and Farallon Islands (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Fratercula cirrhata Tufted puffin (nesting colony)	None/CSC/ Group 2	Rocky outcroppings on islands, not necessarily near the nest, and on the ocean. Common at nesting colonies, and on nearby marine pelagic and subtidal waters. Nests on islands and, less commonly, on coastal cliffs. Found along coast from Prince Island in Del Norte Co. to Point Conception (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Synthliboramphus [=Endomychura] hypoleucus *Xantus murrelet* (nesting colony)	FC/ ST/ Group 2	Offshore waters. Rare visitor to southern offshore waters in late summer and fall (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Grebes					
Aechmophorus occidentalis Western grebe	None/None/ Group 1	Along coast in marine subtidal and estuarine waters. Uncommon to fairly common on large lakes near coast and inland at low elevations. Breed on large, marshy lakes, normally deeper than required by eared grebe. Nest on Modoc Plateau and south locally to Inyo Co.; also Sacramento National Wildlife Refuge, Salton Sea, Colorado River, and Sweetwater Reservoir (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Pelicans					
Pelecanus erythrorhynchos American white pelican (nesting colony)	None/CSC/ Group 2	Open water, coastal bays, large inland lakes. Nests at large lakes in Klamath Basin. Common migrant at Salton Sea, Colorado River and rare during winter at Salton Sea, Morro Bay, San Diego Bay (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Pelecanus occidentalis californicus California brown pelican (nesting colony and communal roosts)	FD/ SD, FP /Group 2, MSCP	Open sea, large water bodies, coastal bays and harbors, estuarine, marine subtidal, and marine pelagic waters along coast and breeds on Channel Islands (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cormorants					
Phalacrocorax auritus Double-crested cormorant (nesting colony)	None/WL/ Group 2	Lakes, rivers, reservoirs, estuaries, ocean; nests in tall trees, rock ledges on cliffs, rugged slopes. Resident along coast and inland waters. Common August to May at Salton Sea and Colorado River reservoirs, also found south of San Luis Obispo Co. and Central Valley (2).	No	Low potential to occur.	No suitable habitat for this species on site. Recorded in the vicinity[2].
Herons, Bitterns, and Allies					
Ardea herodias Great blue heron (nesting colony)	None/None/ Group 2	Variety of habitats, but primarily shallow estuaries and fresh and saline emergent wetlands; lakes, rivers, marshes, mudflats, estuaries, saltmarsh, riparian habitats. Found throughout most of California. Few rookeries in Southern California; more numerous in northern California (2).	No	No potential to colonially nest.	Not recorded in the vicinity[2]. No suitable nesting habitat. May forage on site occasionally.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Butorides virescens Green heron	None/None/ Group 2	Nests and roosts in valley foothill and desert riparian habitats; feeds in fresh emergent wetland, lacustrine, slow-moving riverine habitats. Resident in foothills and lowlands throughout California; common August to March in southern coastal ranges, in summer along Colorado River, and found all year at Salton Sea (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable valley foothill or desert riparian habitats.
Egretta rufescens Reddish egret	None/None/ Group 2, MSCP	Forages in saltmarsh, mudflats, coastal lagoons; nests on natural islands or man-made dredge spoil canals, occasionally on coastal mainland. Found in southwestern and central coastal California (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Ixobrychius exilis Least bittern (nesting)	None/CSC/ Group 2	Dense emergent wetland vegetation, sometimes interspersed with woody vegetation and open water. Nests in emergent wetlands. Common summer resident at Salton Sea and Colorado River. Breeds locally in Owens Valley and Mojave Desert and uncommon in emergent wetlands of cattails and tules in San Diego Co., and Sacramento and San Joaquin Valleys (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Ibises and Spoonbills					
Plegadis chihi White-faced ibis (nesting colony)	None/WL/ Group 1, MSCP	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields and estuaries. Uncommon summer resident in areas of Southern California (esp. Salton Sea area), rare visitor to Central Valley (2).	No	Low potential to occur. No nesting potential.	Not recorded in the vicinity[2]. No suitable marsh or wetland habitat; no nesting habitat.
Ducks, Geese, and Swans					
Anas strepera Gadwall	None/None/ Group 2	Interior valleys, wetlands, ponds, and streams. Feeds and rests in freshwater lacustrine and emergent habitats, and to a lesser extent, estuarine and saline emergent habitats, and nests	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
		in nearby herbaceous and cropland habitats. Common in Central Valley and less common in Coast Range foothills of central and Southern California. Locally common in Imperial Valley and along Colorado River, October to March. Breeds on northeastern plateau and east of Sierra Nevada (2).			
Anser caerulescens Snow goose	None/None/ Group 2	Fresh emergent wetlands, adjacent lacustrine waters, and nearby wet croplands, pastures, meadows, and grasslands. Occasionally found in saline (brackish) emergent wetlands and adjacent estuarine waters. Found primarily in Central Valley; less common southward in the interior but abundant in Imperial Valley and locally common along Colorado River. Found regularly only in Southern California along Coast Ranges and immediate coast from mid-November to February (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Aythya americana Redhead	None/CSC/ Group 2	Lacustrine waters, foothills and coastal lowlands, and along the coast and Colorado River. Nests in fresh emergent wetland bordering open water. Found south of Modoc Co. to Mono Co., Central Valley, Monterey Co. south to Ventura Co.; breeds in Central Valley, eastern Kern Co., coastal Southern California, and Salton Sea (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Branta canadensis Canada goose	None/None/ Group 2, MSCP	Lakes, fresh emergent wetlands, moist grasslands, croplands, pastures, and meadows. Winter migrant throughout Central Valley, Salton Sea, northeastern California, also along Colorado River (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Bucephala islandica Barrow's goldeneye	None/CSC/ Group 2	Estuarine (lagoons and bays) and brackish lacustrine waters. Found along central California coast, San Francisco Bay, Marin and Sonoma Cos., Colorado River (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Dendrocygne bicolor Fulvous whistling-duck (nesting)	None/CSC/ Group 2	Fresh emergent wetlands, shallow lacustrine and quiet riverine waters; feeds in wet croplands and pastures. Nests in dense wetlands of cattails in Imperial Valley along south end of Salton Sea (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
New World Vultures					
Cathartes aura Turkey vulture	None /None/ Group 1	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting and resting throughout most of California during breeding season (2).	Yes	Recorded on site.	Suitable open habitats for foraging. Not recorded in the vicinity[2]. No suitable areas for nesting, although could roost in large trees in riparian areas.
Ospreys					
Pandion haliaetus Osprey	None /WL/ Group 1	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats (primarily ponderosa pine through mixed conifer), but widely observed along the coast. Breeds from Cascade Ranges south to Lake Tahoe and along northwest coast. Uncommon breeder along southern Colorado River. Uncommon along coast of Southern California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable foraging or nesting habitat. Would only fly over site en route to surrounding reservoirs (e.g., Lake Jennings, Loveland, El Capitan, San Vicente).
Hawks, Kites, Eagles, and Allies					
Accipiter cooperii Cooper's hawk (nesting)	None/WL/ Group 1, MSCP	Dense stands of live oak, riparian deciduous, forest habitats near water. Breeds in southern Sierra Nevada foothills, New York mountains, Owens Valley, other local areas in Southern California, 0–2,700 meters (2).	Yes	Recorded on site.	Suitable habitat on site. Recorded in the vicinity[2]. No nesting behavior observed.
Accipiter striatus Sharp-shinned hawk (nesting)	None/WL/ Group 1	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats. Common migrant and winter resident	No	Low potential to nest.	Not recorded in the vicinity[2]. High potential to forage during winter, but does not nest on the coastal slope in Southern California.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
		throughout California. Probably breeds south in Coast Ranges and at scattered locations in Transverse and Peninsular Ranges (2).			
Aquila chrysaetos Golden eagle (nesting and wintering)	None /FP, WL/Group 1, MSCP	Rolling foothills, mountain areas, sage-juniper flats, desert throughout California (2).	No	Moderate potential to occur.	Suitable open and mountainous habitat on site for this species to forage. No suitable nesting habitat. Recorded in the vicinity[2].
Buteo lineatus Red-shouldered hawk	None/None/ Group 1	Riparian and woodland habitats interspersed with swamps and wetlands found along coast, southern deserts, and in Central Valley, 0-1500m (2).	Yes	Recorded on site.	Suitable riparian habitat found on site. Not recorded in the vicinity[2].
Buteo regalis Ferruginous hawk (wintering)	None /WL/Group 1, MSCP	Open, grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, fringes of pinyon-juniper habitats. Uncommon winter resident at low elevations and open grasslands of Modoc Plateau, Central Valley, Coast Ranges. Common winter resident in southwestern California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Would only occur during migration and would not overwinter.
Buteo swainsoni Swainson's hawk	None /ST/Group 1, MSCP	Forages in grasslands or suitable grain or alfalfa fields or livestock pastures; breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in Central Valley (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable grassland or agricultural fields within Preserve.
Circus cyaneus Northern harrier (nesting)	None/CSC/ Group 1, MSCP	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub. Resident of northeastern plateau and coastal areas; less common resident in Central Valley. Breeds at marsh edge in shrubby vegetation in Central Valley and Sierra Nevada (0–1,700 meters), and northeastern California (up to 800 meters) (2).	No	Low potential to nest.	Not recorded in the vicinity[2]. Poor nesting potential, although they likely forage over the site.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Elanus leucurus White-tailed kite (nesting)	None/FP/Group 1	Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian, herbaceous and open stages of most habitats in cismontane California, near agricultural areas. Found in coastal and valley lowlands of California (2).	Yes	Recorded on site. No nesting observed.	Suitable open habitat on site for foraging. Suitable riparian habitats for roosting. Recorded in the vicinity[2]. Moderate potential to nest on site.
Haliaeetus leucocephalus Bald eagle (nesting and wintering)	FD /SE, FP/ Group 1, MSCP	Large bodies of water and flowing rivers with abundant fish, with adjacent snags or other perches; breeds in northern California and is found during winter at few locations throughout Southern California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Caracaras and Falcons					
Falco columbarius Merlin (wintering)	None/WL/ Group 2	Coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, montane hardwood-conifer habitats, ponderosa pine. Found throughout western half of state below 1,500 meters (1).	No	Low potential to winter.	Not recorded in the vicinity[2]. No suitable habitat; may occasionally forage over the Preserve but would not be a winter resident.
Falco mexicanus Prairie falcon (nesting)	None /WL/Group 1	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs. Southeastern deserts northwest through Central Valley and along inner Coast Ranges and Sierra Nevada (2).	No	Low potential to nest.	No suitable grassland or open habitats for foraging. No suitable cliffs or bluffs for roosting. Recorded in the vicinity[2].
Falco peregrinus anatum American peregrine falcon (nesting)	FD/ SD, FP/Group 1, MSCP	Nests in woodland, forest, coastal habitats along coast north of Santa Barbara and in Sierra Nevada, and other mountains of northern California. Winters in Central Valley, and is found in other riparian areas and coastal/inland wetlands (2).	No	Low potential to nest.	Not recorded in the vicinity[2]. No suitable nesting habitat; this species does not typically nest in San Diego County.
New World Quail					
Oreotyx pictus eremophila Mountain quail	None/None/ Group 2	Dense montane chaparral and brushy areas within coniferous forest, pinyon-juniper-yucca associations; uses shrubs, brush stands and trees on steep slopes for cover in most major montane habitats of the state (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of normal range. Poor habitat quality.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Rails, Gallinules, and Coots					
Laterallus jamaicensis coturniculus California black rail	None /ST, FP/Group 2	Saline, brackish, and fresh emergent wetlands mostly in central coastal California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside of normal range.
Rallus longirostris levipes Light-footed clapper rail	FE /SE, FP/Group 1, MSCP	Coastal saline emergent wetlands along Southern California from Santa Barbara Co. to San Diego Co. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cranes					
Grus canadensis tabida Greater sandhill crane	None /ST, FP/Group 2	Wet meadow, shallow lacustrine, and fresh emergent wetland habitats during summer; annual and perennial grassland habitats, moist croplands, and open, emergent wetlands during winter. Breeds in Siskiyou, Modoc, Lassen Cos., and Sierra Valley. Winters in Sacramento and San Joaquin valleys. Was more common in Southern California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Grus canadensis canadensis Lesser sandhill crane	None/CSC/ Group 2	Wet meadow, shallow lacustrine, and fresh emergent wetland habitats during summer; annual and perennial grassland habitats, moist croplands, and open, emergent wetlands during winter. Winters in San Joaquin, Imperial valleys; Carrizo Plain, Brawley, and Blythe (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Mycteria americana Wood stork (Non-breeding, very rare)	None/CSC/ Group 2	Shallow, relatively warm waters with fish for prey. Nests colonially. Found at south end of Salton Sea, San Diego Wild Animal Park (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Lapwings and Plovers					
Charadrius alexandrinus nivosus Western snowy plover (nesting)	FT /CSC/ Group 1, MSCP	Sandy marine and estuarine shores. Nests on these habitats and salt pond levees. Nesting areas in Salton Sea, Mono Lake, shores of alkali lakes of northeastern California, Central Valley, and southeastern deserts (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Charadrius montanus Mountain plover (wintering)	FT/CSC/Group 2, MSCP	Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts. Winters in short grasslands and plowed fields of Central Valley below 1,000 meters (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Sandpipers, Phalaropes, and Allies					
Numenius americanus Long-billed curlew (nesting)	None /WL/ Group 2, MSCP	Nests in upland shortgrass prairies and wet meadows in northeast California; winters in coastal estuaries, open grasslands and croplands along California coast, and in Central and Imperial valleys (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Gulls, Terns, and Skimmers					
Chlidonias niger Black tern (nesting colony)	None/CSC/ Group 2	Freshwater lakes, marshes, ponds, coastal lagoons. Breeds in freshwater habitats but common on bays, salt ponds, river mouths, pelagic waters during spring and fall migration. Found throughout fresh emergent wetlands of California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Leucophaeus [=Larus] atricilla Laughing gull (nesting colony)	None/WL/ Group 2	Once a regular nester at the south end of the Salton Sea. Possibly extirpated from California (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Larus californicus California gull (nesting colony)	None/WL/ Group 2	Along the coast: sandy beaches, mudflats, rocky intertidal and pelagic areas of marine and estuarine habitats, fresh and saline emergent wetlands. Inland: lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities. Nests in alkali and freshwater lacustrine habitats; adults roost along shorelines, landfills, pastures, and on islands. Nest along northeastern plateau region and at Mono Lake (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Rynchops niger Black skimmer (nesting)	None /CSC/ Group 1	Roosting takes place on sandy beaches or gravel bars. Rarely alights on water. Visitor to coastal estuaries and river mouths. Summer resident at Salton Sea. Yearlong resident at San Diego Bay. Known infrequently from additional interior locations on Colorado River and Lakeview, Riverside Co. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Sterna antillarum browni California least tern (nesting colony)	FE /SE, FP/Group 1, MSCP	Breeding colonies located in marine and estuarine shores in Southern California, and in San Francisco Bay in abandoned salt ponds and estuarine shores. Feeds in nearby waters. Are migratory to California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Thalasseus [=*Sterna*] *elegans* Elegant tern (nesting colony)	None /WL/ Group 1, MSCP	Coastal waters, estuaries, large bays and harbors, mudflats; rarely occur offshore and never found inland. Found along coastal California, most common in Southern California, not found north of Marin Co. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cuckoos, Roadrunners, and Anis					
Coccyzus americanus occidentalis Western yellow-billed cuckoo (nesting)	FC/SE/Group 1	Dense, wide riparian woodlands and forest with well-developed understories. Valley foothill and desert riparian habitats scattered throughout California – Colorado River, Sacramento and Owens Valleys, South Fork of the Kern River, Santa Ana River, and Amargosa River (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Presumed extirpated from the County.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Barn Owls					
Tyto alba Barn owl	None/None/ Group 2	Open habitats including grassland, chaparral, riparian, and other wetlands throughout the state, 0–1,680 meters (2).	Yes	Recorded on site.	Recorded on site during focused avian night surveys. Not recorded in the vicinity[2].
Typical Owls					
Asio flammeus Short-eared owl (nesting)	None /CSC/ Group 2	Open areas with few trees, such as grasslands, prairies, dunes, meadows, irrigated lands, saline and fresh emergent wetlands. Breeds in coastal areas in Del Norte and Humboldt Cos., San Francisco Bay Delta, northeastern Modoc plateau, east side of Sierra from Lake Tahoe south to Inyo Co., and San Joaquin Valley. Uncommon winter migrant in Southern California, and widespread during winter in Central Valley and coastline (2).	No	Low potential to nest.	Not recorded in the vicinity[2]. No suitable habitat. Does not nest in Southern California.
Asio otus Long-eared owl (nesting)	None/CSC/ Group 1	Riparian, live oak thickets, other dense stands of tree. Uncommon winter visitor in Southern California deserts and Central Valley; uncommon resident throughout the rest of the state (2).	No	Low potential to nest.	Not recorded in the vicinity[2]. Moderately suitable riparian vegetation, but may not be dense enough for this species.
Athene cunicularia Burrowing owl	None /CSC/ Group 1, MSCP	Open, dry grassland and desert habitats; grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats throughout the state, 0–1,600 meters (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable grassland habitat for this species. Too few flat and open habitats present.
Strix occidentalis occidentalis California spotted owl	None /CSC/ Group 1	Dense, old-growth, multi-layered mixed conifer, redwood and Douglas-fir habitats in northern California; oak and oak-conifer habitats in Southern California; 0–2,300 meters (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside of known range.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Swifts					
Cypseloides niger Black swift (nesting)	None /CSC/Group 2	Nests in moist crevices or caves on sea cliffs or near waterfalls in deep canyons; forages over many habitats. Nests in Sierra Nevada, Cascade Range, San Gabriel, San Bernardino, San Jacinto Mountains., coastal bluffs and mountains from San Mateo Co. south to San Luis Obispo Co. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Woodpeckers and Allies					
Melanerpes lewis Lewis' woodpecker	None /None/Group 1	Open oak savannahs, broken deciduous and coniferous habitats. Eastern slopes of coast ranges south to San Luis Obispo Co., winters in Central Valley, Modoc Plateau, and Transverse and other ranges in Southern California. Breeds eastern slopes of coast ranges, Sierra Nevada, Cascade Range (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Poor habitat quality. Outside of normal range.
Tyrant Flycatchers					
Contopus cooperi [*borealis*] Olive-sided flycatcher (nesting)	None /CSC/ Group 2	Summer resident in a wide variety of forest and woodland habitats. Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine. Found throughout California excluding deserts, Central Valley and other lowland valleys and basins, below 2800m (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable forest or woodland habitats.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Empidonax traillii extimus Southwestern willow flycatcher	FE /SE/ Group 1, MSCP	Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk. Broad, open river valleys or large mountain meadows with lush growth of shrubby willows. Found in riparian habitats in northern San Diego Co. (1).	No	Low potential to occur.	Suitable riparian woodlands although riparian belt not as wide as preferred by this species. Recorded in the vicinity[2].
Pyrocephalus rubinus Vermillion flycatcher	None/CSC/ Group 1	Nesters inhabit cottonwood, willow, mesquite, and other vegetation in desert riparian habitat adjacent to irrigated fields, irrigation ditches, pastures and other open, mesic areas in isolated patches. Found along Colorado River, especially near Blythe, Riverside Co. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of normal range. No desert riparian habitat.
Larks					
Eremophila alpestris actia California horned lark	None/WL/ Group 2	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields south of Humboldt Co. in coast ranges, in San Joaquin Valley except extreme southern end (2, 4).	No	Low potential to occur.	No suitable grassland habitats on site. Recorded in the vicinity[2].
Swallows					
Progne subis Purple martin (nesting)	None/CSC/ Group 1	Nests in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest and woodland. Found throughout the state in wooded, low-elevation habitats. Rare and local breeder in the south in mountain ranges and along coast (2).	No	Moderate potential to nest.	Not recorded in the vicinity[2]. Moderately suitable habitat for foraging and nesting, although riparian areas may not be as tall as needed.
Riparia riparia Bank swallow (nesting)	None/ST/Group 1	Riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it digs nesting holes; most breeding occurs along banks of Sacramento and Feather Rivers (2).	No	Low potential to occur. No nesting potential.	Not recorded in the vicinity[2]. No suitable banks or bluffs for nesting.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Wrens					
Campylorhynchus brunneicapillus sandiegensis Coastal (San Diego) cactus wren	None /CSC/ Group 1, MSCP	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub. In arid parts of westward-draining slopes of Southern California (2).	No	Low potential to occur.	No suitable cactus patches found on site for this species. Recorded in the vicinity[2].
Gnatcatchers and Gnatwrens					
Polioptila californica californica Coastal California gnatcatcher	FT /CSC/ Group 1, MSCP	Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer. Found from eastern Orange and southwestern Riverside Cos. south through coastal foothills of San Diego Co. (2).	Yes	Recorded on site.	Moderately suitable coastal scrub habitat on site. Recorded in the vicinity[2].
Thrushes					
Siala mexicana Western bluebird	None/None/ Group 2, MSCP	Open forests of deciduous, coniferous or mixed trees, savanna, edges of riparian woodland. Common throughout California excluding higher mountains and eastern deserts (2).	Yes	Recorded on site.	Suitable oak woodland riparian edge habitat within Preserve. Not recorded in the vicinity[2].
Mockingbirds and Thrashers					
Toxostoma bendirei Bendire's thrasher	None /CSC/ Group 2	Flat areas of desert succulent shrub and Joshua tree habitats in Mojave desert area of San Bernardino and western Kern Cos. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside of range.
Toxostoma crissale Crissal thrasher	None/CSC/ Group 1	Dense thickets of shrubs or low trees in desert riparian and desert wash habitats. Also, dense sagebrush and other shrubs in washes within juniper and pinyon-juniper habitats up to 1,800 meters. Common in Colorado River Valley; less common in eastern Mojave Desert, Imperial, Coachella and Borrego valleys (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside of range.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Shrikes					
Lanius ludovicianus Loggerhead shrike (nesting)	None /CSC/ Group 1	Open habitats with scattered shrubs, trees or other perches; highest density in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Found in foothills and lowlands throughout California (2).	No	Moderate potential to occur.	Not recorded in the vicinity[2]. Marginal nesting habitat, but good foraging habitat.
Vireos					
Vireo bellii pusillus Least Bell's vireo (nesting)	FE /SE/ Group 1, MSCP	Willows and low, dense valley foothill riparian habitat and lower portions of canyons; along western edge of deserts in desert riparian habitat, 0–600 meters. Found in San Benito and Monterey Cos., and coastal Southern California from Santa Barbara Co. south (2).	No	Moderate potential to nest.	Suitable dense riparian vegetation within Preserve. Within range. Recorded in the vicinity[2].
Vireo vicinior Gray vireo (nesting)	None /CSC/ Group 1	Summer resident in arid pinyon-juniper, juniper, and chamise-redshank chaparral habitats in mountains of Southern California, 600–2,000 meters (2).	No	Low potential to nest.	Not recorded in the vicinity[2]. No suitable breeding habitat.
Wood-warblers					
Dendroica petechia brewsteri Yellow warbler	None /CSC/ Group 2	Nests in lowland and foothill riparian woodlands; montane chaparral, open ponderosa pine, mixed conifer habitats up to 2,500 meters; winters in a variety of habitats. Breeds from coast range in Del Norte Co., east to Modoc plateau, south to Santa Barbara and Ventura Cos., western slope of Sierra Nevada south to Kern Co.; also breeds in ranges in San Diego Co. (2).	No	High potential to occur.	Suitable riparian habitat found on site. Recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Icteria virens Yellow-breasted chat (nesting)	None/CSC/ Group 1	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles and dense brush. Coastal California, foothills of Sierra Nevada. Breeds locally on coast in Southern California and very locally inland, at elevations up to 1,450 meters in valley foothill riparian, and up to 2,050 meters east of Sierra Nevada in desert riparian habitats (2).	No	Low potential to occur.	Riparian vegetation found on site is not dense or wide enough for this species. Recorded in the vicinity[2].
Emberizids					
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	None/WL/ Group 1, MSCP	Sparse mixed chaparral and coastal scrub habitats (especially coastal sage) in Southern California on slopes of Transverse and Coastal ranges, north to Los Angeles County, and northwestern Baja California. Found on steep, rocky hillsides with grass and forb patches, and grassy slopes without shrubs, if rock outcrops are present (2, 4).	Yes	Recorded on site.	Suitable habitat on site. Recorded in the vicinity[2].
Amphispiza belli belli Bell's sage sparrow	None /WL/Group 1	Low, dense stands of shrubs; chaparral dominated by chamise, coastal scrub dominated by sage. Coast Ranges from Northern California to northwestern Baja California, western slope of Sierra Nevada (2, 4).	No	High potential to occur.	Suitable chaparral habitat on site, especially chamise chaparral. Recorded in the vicinity[2].
Ammodramus savannarum Grasshopper sparrow	None/CSC/ Group 1	Dry, dense grasslands, especially with a variety of grasses and tall forbs, scattered shrubs for singing perches. Summer resident and breeder in foothills and lowlands west of Cascade–Sierra Nevada crest from Mendocino and Trinity Cos. south to San Diego Co. In Southern California, occurs on hillsides and mesas in coastal areas, breeds up to 1,500 meters (2).	No	Low potential to occur.	No suitable grassland habitat on site. Recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Junco hyemalis caniceps Gray-headed junco (nesting)	None/WL/ Group 2	Found in forests and woodlands from montane hardwood-conifer forests up through alpine dwarf-shrub habitats. Breeds locally in White and Grapevine mountains, and on Clark Mt. in southeastern California. Is more common east of Sierra Nevada during winter (2).	No	Low potential to occur. No nesting potential.	Not recorded in the vicinity[2]. Generally unsuitable habitat and location, but may occur during the winter.
Passerculus sandwichensis beldingi Belding's savannah sparrow	None/SE/Group 1, MSCP	Scattered southern coastal wetlands in southwestern California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Passerculus sandwichensis rostratus Large-billed savannah sparrow (wintering)	None/CSC/ Group 2, MSCP	Grassland, saline emergent wetlands from central coastal and Southern California; Santa Cruz, Morro Bay, San Miguel Island, San Clemente Island, San Diego (2, 4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cardinals and Allies					
Piranga rubra Summer tanager (nesting)	None/CSC/ Group 2	Nests in desert riparian woodland dominated by cottonwoods and willows; winter habitats include parks and residential areas. Found along lower Colorado River and locally in Southern California deserts (2).	No	Low potential to occur. No nesting potential.	Not recorded in the vicinity[2]. Generally unsuitable habitat.
Blackbirds					
Agelaius tricolor Tricolored blackbird	None /CSC/ Group 1, MSCP	Breeds in emergent wetland with tall, dense cattails or tules; willow, blackberry, tall herb thickets. Feeds in grassland and cropland habitats. Found throughout Central Valley and coastal areas south of Sonoma Co. (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Mammals					
Small Mammals					
Chaetodipus californicus femoralis Dulzurapocket mouse	None/CSC/ Group 2	Open habitat, coastal sage scrub, chaparral, oak woodland, chamise chaparral, mixed conifer habitats; disturbance specialist; 0–3,000 feet (7, 8).	Yes	Recorded on site	Suitable coastal sage scrub and chaparral habitat on site for this species. Recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	None/CSC/ Group 2	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse mixed and chamise chaparral; rocky and gravelly areas with yucca overstory, 500–3,000 feet (8).	Yes	Recorded on site	Suitable coastal sage scrub and chaparral habitat on site for this species. Not recorded in the vicinity[2].
Chaetodipus fallax pallidus Pallid San Diego pocket mouse	None/CSC/ Group 2	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland. Along southern margins of Mojave Desert, along northern slopes of San Bernardino Mountains., western edge of Colorado Desert south to Baja California (5).	No	High potential to occur.	Suitable coastal scrub and chaparral habitat on site for this species. Recorded in the vicinity[2].
Dipodomys stephensi Stephens' kangaroo rat	FE/ST/Group 1	Open habitat, grassland, sparse coastal sage scrub, sandy loam and loamy soils with low clay content; gentle slopes (<30%) and sparse vegetative cover. Found around San Jacinto Valley (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable open grassland habitat within the Preserve.
Neotoma lepida intermedia San Diego desert woodrat	None/CSC/ Group 2	Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats. Found south of San Luis Obispo Co. to San Diego Co. and San Bernardino and Riverside Cos., 0–2,600 meters (2, 4).	Yes	Recorded on site	Suitable chaparral habitat found on site. Recorded in the vicinity[2].
Onychomys torridus ramona Southern grasshopper mouse	None/CSC/ Group 2	Alkali desert scrub and other desert scrub habitats, sparse coastal scrub, especially with friable soils for digging in Mojave Desert and southern Central Valley (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Poor habitat quality.
Perognathus longimembris pacificus Pacific pocket mouse	FE/CSC/Group 1	Coastal dunes, river alluvium, coastal sage scrub with firm sandy soils; along immediate coast in San Diego, Orange, and Los Angeles Cos. (4, 5).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of range.
Perognathus longimembris brevinasus Los Angeles pocket mouse	None /CSC/ Group 2	Grassland, coastal sage scrub, disturbed habitats; fine, sandy soils with sparse vegetation from San Fernando Valley to San Bernardino, and to Hemet and Aguanga (6).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of range.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Perognathus longimembris internationalis Jacumba pocket mouse	None/CSC/ Group 2	Desert riparian, desert scrub, desert wash, coastal scrub, and sagebrush in San Diego and Riverside Cos. (2, 5).	No	Low potential to occur.	Not recorded in the vicinity[2]. Poor habitat quality.
Bats					
Antrozous pallidus Pallid bat	None /CSC/Group 2	Grasslands, shrublands, woodlands, forests; most common in open dry habitats with rocky outcrops for roosting. Found throughout low elevations of California, except for high Sierra Nevada and northwestern corner of the state south to Mendocino Co. (2).	Yes	Recorded on site.	Suitable shrubland and woodland habitat for this species. No suitable rocky outcrops for roosting. Recorded in the vicinity[2].
Choeronycteris mexicana Mexican long-tongued bat	None/CSC/ Group 2	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings. Summer resident in San Diego Co. (2).	No	Moderate potential to occur.	No suitable desert habitat or montane riparian habitat on site for this species. Recorded in the vicinity[2].
Coryorhinus townsendii Townsend's big-eared bat	None /CSC/ Group 2	Mesic habitats, gleans from brush or trees or feeds along habitat edges. Found in all habitats but subalpine and alpine throughout California (2).	No	High potential to occur.	Suitable mesic habitat on site. Recorded in the vicinity[2].
Euderma maculatum Spotted bat	None /CSC/ Group 2	Foothills, mountains, desert regions of Southern California including arid deserts, grasslands, mixed conifer forests. Roosts in rock crevices, cliffs. Feeds over water and along washes (2).	No	Low potential to occur.	Foothill habitat may be suitable for this species, but more commonly associated with desert regions. Not recorded in the vicinity[2].
Eumops perotis californicus Greater western mastiff bat	None /CSC/ Group 2	Roosts in small colonies in cracks and small holes, seeming to prefer man-made structures. All subalpine and alpine habitats; 50–10,000 feet (8).	Yes	Recorded on site	Suitable habitat on site, but no suitable roosting areas. Recorded in the vicinity[2].
Lasiurus blossevillii Western red bat	None /CSC/ Group 2	Prefers edges with trees for roosting and open areas for foraging. Roosts in woodlands and forests. Forages over grasslands, shrublands, woodlands, forests, and croplands. Found south of Shasta Co. to Mexican border, and west of the Sierra Nevada/Cascade crest. In winter, occupies coastal regions and lowlands south of San Francisco Bay (2).	Yes	Recorded on site	Suitable roosting and foraging areas. Recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Lasiurus xanthinus Western yellow bat	None/CSC/ None	Desert wash.	Yes	Recorded on site	Recorded in the vicinity[2].
Macrotus californicus California leaf-nosed bat	None /CSC/ Group 2	Desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis. Found from Riverside, Imperial, San Diego, and San Bernardino Cos. south to Mexican border; fairly common along parts of Colorado River, elevation approximately 600 meters (2).	No	Low potential to occur.	No suitable desert habitat on site. Recorded in the vicinity[2].
Myotis ciliolabrum Small-footed myotis	None /None/ Group 2	Deserts, chaparral, riparian zones, western coniferous forest; most common above pinyon-juniper forest. Roost in caves, old mines, abandoned buildings (9).	Yes	Recorded on site	Suitable riparian and chaparral habitats on site. Recorded in the vicinity[2].
Myotis evotis Long-eared myotis	None /None/ Group 2	Roosts in buildings, crevices, under bark, and snags. Caves used as night roosts. Feeds along habitat edges, in open habitats, and over water. Occurs primarily along entire coast and in Sierra Nevada, Cascades, Great Basin, and 0–2,700 meters (2).	No	Low potential to occur.	Moderately suitable habitat on site. Site not located within range. Recorded in the vicinity[2].
Myotis thysanodes Fringed myotis	None /None/ Group 2	Pinyon-juniper, valley foothill hardwood, hardwood-conifer habitats. Roosts in caves, mines, buildings, or crevices. Forges over open habitats, early successional stages, streams, lakes, and ponds. Found throughout California except Central Valley and Colorado and Mojave Deserts (2).	No	Low potential to occur.	No suitable habitat on site, or open habitats for foraging. Riparian areas on site are most likely too closed for this species. Not recorded in the vicinity[2].
Myotis volans Long-legged myotis	None/None/ Group 2	Occupies woodland and forest habitats over 1,200 meters. Feeds over open water and over open habitats such as chaparral and coastal scrub, using denser woodlands and forests for cover and reproduction. Roosts in rock crevices, buildings, under tree bark, in snags, mines, caves. Found in coastal ranges, Cascade/Sierra Nevada ranges, Great Basin, and ranges in Mojave Desert (2).	No	Low potential to occur.	Stoneridge Preserve not located within this species' elevational range. Not recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Myotis yumanensis Yuma myotis	None /None/ Group 2	Closely tied to open water which is used for foraging; open forests and woodlands are optimal habitat throughout California, 0–3,300 meters (2).	Yes	Recorded on site	Recorded in the vicinity[2].
Nyctinomops femorosaccus Pocketed free-tailed bat	None/CSC/ Group 2	Rocky desert areas with high cliffs or rock outcrops. Pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, palm oasis in Riverside, San Diego, Imperial Cos. (2).	Yes	Recorded on site	Recorded in the vicinity[2].
Nyctinomops macrotis Big free-tailed bat	None/CSC/ Group 2	Rugged, rocky canyons in Riverside, Los Angeles, and San Diego Cos., but scattered records across California to Oakland (2, 5).	No	Moderate potential to occur.	Few rocky canyons located on site, but site could be used for foraging. Recorded in the vicinity[2].
Medium Mammals					
Bassariscus astutus Ringtail	None/None/ Group 2	Mixed forests and shrublands near rocky areas or riparian habitats. Forages near water and is seldom found more than 1 kilometer from a water source. Is widely distributed throughout California (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Poor habitat quality.
Lepus californicus bennettii San Diego black-tailed jackrabbit	None/CSC/ Group 2	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands in Southern California (2, 4).	No	Moderate potential to occur.	Moderately suitable open habitat on site but may be too hilly for this species. Recorded in the vicinity[2].
Taxidea taxus American badger	None/CSC/ Group 2, MSCP	Dry, open treeless areas, grasslands, coastal sage scrub, especially with friable soils throughout California (2).	No	Low potential to occur.	No suitable open areas for this species. Recorded in the vicinity[2].
Large Mammals					
Odocoileus hemionus Mule deer	None/None/ Group 2, MSCP	Coastal sage scrub, chaparral, riparian, woodlands, forest; often browses in open areas adjacent to cover throughout California, except deserts and intensely farmed areas (2).	Yes	Recorded on site.	Captured on site during camera traps. Not recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Ovis canadensis nelsoni DPS Peninsular bighorn sheep	FE/ST, FP/Group 1	Alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, and montane riparian from San Jacinto and Santa Rosa ranges south to Mexico (2).	No	Low potential to occur.	Not recorded in the vicinity[2]. Outside of range.
Puma [=*Felis*] *concolor* Mountain lion	None/None/ Group 2, MSCP	Coastal sage scrub, chaparral, riparian, woodlands, forest; rests in rocky areas, and on cliffs and ledges that provide cover. Most abundant in riparian areas and brushy stages of most habitats throughout California except deserts (2).	No	High potential to occur.	Suitable sage scrub and chaparral habitats within the Preserve. Not recorded in the vicinity[2].
Invertebrates					
Butterflies					
Apodemia mormo peninsularis Peninsular metalmark	None/None/ Group 1	Meadows. Larval hostplant *Eriogonum wrightii* ssp. *membranaceum.* Specimen from meadows in Laguna Mountains., 5500 feet (10)	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Callophyrs (=Mitoura) thornei Thorne's hairstreak butterfly	None /None/ Group 1, MSCP	Tecate cypress on chaparral-covered dry rocky slopes, Otay Mtn. (4).	No	Low potential to occur.	No suitable Tecate cypress found on site for this species. Recorded in the vicinity[2].
Danaus plexippus Monarch butterfly (wintering sites)	None/None/ Group 2	Overwinters in eucalyptus groves from San Francisco south to northern Baja California (4).	No	Moderate potential to occur. No wintering sites.	Not recorded in the vicinity[2]. No suitable wintering habitat.
Euphydryas editha quino Quino checkerspot butterfly	FE/None/Group 1	Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant *Plantago erecta* and nectar plants must be present, San Diego and Riverside Cos. (4).	No	Moderate potential to occur.	Surveys for host plants for this species were negative. Suitable habitat structure on site, including ridgetops and open chaparral. Recorded in the vicinity[2].

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Euphyes vestris harbisoni Harbison's dun skipper	None/None/ Group 1	Canyon bottoms, creeks, seeps beneath shade of oak trees in riparian habitats supporting host plant *Carex spissa* growing near *Toxicodendron diversilobum*. Found throughout western San Diego Co. to Santa Ana Mountains. Of Orange Co., with largest population in Ramona–Escondido area (11).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Lycaena hermes Hermes copper butterfly	None/None/ Group 1	Coastal sage scrub, southern mixed chaparral supporting at least 5% cover of host plant *Rhamnus crocea*. Adults visit *Eriogonum fasciculatum* and *Helianthus gracilentus*. On well-drained hillsides and canyon bottoms, coastal San Diego Co. south to Santo Tomas, Baja California (4).	No	High potential to occur.	Larval host plant *Rhamnus crocea* and adult host plant *Eriogonum fasciculatum* recorded on site. Closest recording to Preserve is approximately 3.6 miles southeast at Loveland Reservoir.
Megathymus yuccae harbisoni Coastal giant skipper	None/None/ Group 2	Coastal dunes, open yucca flats, desert canyons, open woodland, grassland, and old fields. Record from eastern San Diego Co. near Scissors Crossing (4, 10).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Panoquina errans Wandering (= saltmarsh) skipper	None/None/ Group 1, MSCP	Salt marsh from Los Angeles to Baja California, Mexico. Host plant *Distichlis spicata* in salt marshes or near beaches, mouths of rivers (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Papilio multicaudata Two-tailed swallowtail	None/None/ Group 1	Semi-arid canyonland, mid-level mountains, canyon bottoms; groves, parks, roadsides (4).	No	Low potential to occur.	Moderately suitable habitat. Not recorded in the vicinity[2].
Plebejus saepiolus hilda Hilda blue	None/None/ Group 1	Grassy meadow, near small pond; oviposit on *Trifolium wormskioldii*. In San Bernardino mountains. (10).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Pseudocopaeodes eunus eunus Alkali skipper	None/None/ Group 1	Desert seeps, alkali flats of Kern River, Kern Co. Hostplant grass: *Distichils spicata* var. *spicata* (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Pyrgus ruralis lagunae Laguna Mountain skipper	FE/None/ Group 1	Only in a few open meadows in yellow pine forest between 5,000 and 6,000 feet in the vicinity of Mt. Laguna and Palomar Mtn. Eggs laid on leaves of *Horkelia clevelandi*. Larvae feed on leaves and	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
		overwinter on the host plant (4).			
Other					
Ariolimax columbianus stramineus Palomar banana slug	None/None/ Group 2	Humid coastal forests; Santa Cruz Island (13, 14).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside of range.
Branchinecta sandiegonensis San Diego fairy shrimp	FE/None/Group 1, MSCP	Small, shallow vernal pools, occasionally ditches and road ruts in coastal mesa system of Southern California and Baja California (4).	No	Low potential to occur.	No vernal pools observed on site during the study. Recorded in the vicinity[2].
Brennania belkini Belkin's dune fly	None/None/ Group 2	Coastal sand dunes of Southern California. Only CNDDB records are from Venice, Los Angeles Co. (5).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cicindela gabbii Gabb's tiger beetle	None/None/ Group 2	Estuaries and mudflats; generally on dark-colored mud; occasional on dry saline flats of estuaries or mouth of river, Orange and San Diego Cos. (5).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cicindela hirticollis gravida Sandy beach tiger beetle	None/None/ Group 2	Clean, dry, light-colored sand in upper zone of the beach dunes, close to non-brackish water along coastal California (5).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cicindela latesignata latesignata Sand dune tiger beetle	None/None/ Group 2	Sand and alkali flats at the mouth of river, sandy areas, beaches in coastal Southern California (5).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cicindela latesignata obliviosa Oblivious tiger beetle	None/None/ Group 2	Inhabited the Southern California coastline, from La Jolla north to the Orange Co. line. Occupied saline mudflats and moist sandy spots in estuaries of small streams in the lower zone. Has not been observed in 20 years (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cicindela senilis frosti Tiger beetle	None/None/ Group 2	Coastal salt marshes; fresh/brackish lagoons, open patches of *Salicornia*, dried salt pans, muddy alkali area. Records in Riverside, San Diego, Los Angeles, Ventura Cos. (4, 5).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Cicindela trifasciata sigmoidea Mudflat tiger beetle	None/None/ Group 2	Has been identified along the fringe of a mudflat and low marsh habitat (15).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Coelus globosus Globose dune beetle	None/None/ Group 1	Fore dunes, sand hummocks, back dunes along immediate coast. Larvae, adults spend time under vegetation or debris from Santa Cruz south to Ventura Cos. Possibly extirpated in San Diego and other coastal counties (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Halictus harmonius Harmonius halictid bee	None/None/ None	Foothills of San Bernardino and San Jacinto Mountains (16).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Helminthoglypta coelata Mesa shoulderband snail	None/None/ Group 2	Coastal San Diego County (5).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Linderiella occidentalis California lindellaria	None/None/ Group 1	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity and TDS. Central Valley, Santa Rosa Plateau (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Phobetus robinsoni Robinson's rain beetle	None/None/ Group 2	Chaparral, coastal sage scrub (12).	No	Low potential to occur.	Suitable chaparral habitat on site. Not much is known about this species' range and life history. Not recorded in the vicinity[2].
Streptocephalus woottoni Riverside fairy shrimp	FE/None/Group 1, MSCP	Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids; in patches of grassland or agriculture interspersed in coastal sage scrub vegetation in Southern California(4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Trigonoscuta blaisdelli Blaisdell trigonoscuta weevil	None/None/ Group 2	*Trigonoscuta* sp.: Coastal, desert, or inland sand dunes; *Atriplex* and *Astragalus oxyphysus* are host plants for the genus (12).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.
Tryonia imitator Mimic tryonia, California brackishwater snail	None/None/ Group 2	Coastal lagoons, herbaceous wetlands, brackish salt marshes; distributed among semi-continuous estuarine habitats along coast (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
		Fish			
Cyprinodon macularius Desert pupfish	FE/SE/ Group 2	Desert springs, outflow marshes, river-edge marshes, backwaters, saline pools, streams, water less than 1m depth. Tolerates low oxygen levels, high temperatures, high salinity; can live in salinities from fresh water to 68 ppt., can withstand temperatures from 9°–45°C and DO levels down to 0.1 ppm. Found from San Felipe Creek, San Sebastian Marsh, Salt Creek, Salton Sea (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside species range.
Eucyclogobius newberryi Tidewater goby	FE/CSC/ Group 1	Coastal lagoons, upper ends of lagoons created by small coastal streams, fresh to brackish water in lower sections of coastal streams; occurs in water 25–100 centimeters deep and prefers mud substrates and areas of high dissolved oxygen. Found with sparse distribution along coast of California south of Del Norte Co. to San Diego Co. (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside species range.
Gasterosteus aculeatus williamsoni Unarmored three-spine stickleback	FE /SE, FP/Group 2	Clear, cool, slow-flowing streams with sand or mud substrate, weedy pools, backwaters, among emergent vegetation at stream edge, in abundant aquatic vegetation in Santa Clara River drainage (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside species range.
Gila orcutti Arroyo chub	None /CSC/Group 1	Permanent, small to moderate sized, moderate to high gradient streams with flow; headwaters, creeks, small to medium rivers, intermittent streams. Prefer slow moving sections with sand or mud substrate. Found in Southern California watersheds (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. Streams located within Preserve are ephemeral and would not support this species.

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Verified on Site (direct/ indirect evidence)	Potential to Occur On site	Factual Basis for Determination
Oncorhynchus mykiss Rainbow trout — Steelhead form (Southern California)	FE/CSC/ Group 1	*Oncorhynchus mykiss* ssp. *irideus*: Santa Maria River south to southern extent of range (San Mateo Creek in San Diego Co.); Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions. Ocean, rivers, creeks, large inland lakes, juveniles spend time in ocean before returning to natal stream to spawn; prefer summer temperatures 10°–15°C. Migration requires deep (3 meters) pools with cover along river course (4).	No	Low potential to occur.	Not recorded in the vicinity[2]. No suitable habitat. Outside species range.

[1] Status Designations:

Federal

FC	Candidate for federal listing as Threatened or Endangered
FD	Federally-delisted; monitored for five years
FE	Federally listed Endangered
FT	Federally listed as Threatened

State Designations:

CSC	California Special Concern Species
FP	California Department of Fish and Game Fully Protected Species
WL	California Department of Fish and Game Watch List Species
SD	State-delisted
SE	State-listed as Endangered
ST	State-listed as Threatened

County Designations:

Group 1	Animals of high sensitivity (listed or specific natural history requirements)
Group 2	Animals declining, but not in immediate threat of extinction or extirpation
MSCP	Covered Species under the MSCP

[2] Vicinity: Based on CNDDB 9 Quadrangle search of the surrounding quadrangles, including Alpine, Dulzura, Jamul Mountain, Tule Spring, Viejas Mountain, Barrett Lake, El Cajon Mountain, San Vicente Reservoir, El Cajon.

INTENTIONALLY LEFT BLANK

REFERENCES FOR APPENDIX E

Academy of Natural Sciences. 1896. *Proceedings of the Academy of Natural Sciences of Philadelphia 48.*

Bogan, M.A., E.W. Valdez, and K.W. Navo. 2005. "*Myotis ciliolabrum:* Western Small-footed Myotis." Western Bat Working Group. Accessed December 1, 2011. http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html.

Butterflies of America Foundation. 2011. Butterflies of America. Accessed December 1, 2011. http://butterfliesofamerica.com/.

Brehme, C.S., D.R. Clark, C.J. Rochester, and R.N. Fisher. 2011. "Wildfires Alter Rodent Community Structure across Four Vegetation Types in Southern California, USA." *Fire Ecology* 7(2):81–98. Accessed August 22, 2011. doi: 10.4996/fireecology.0702081.

CaliforniaHerps. 2011. "California Herps: A Guide to the Amphibians and Reptiles of California." Accessed November 22, 2011. http://www.californiaherps.com/.

CSU (California State University Stanislaus). 2006. Endangered Species Recovery Program. Accessed September 2012. http://esrp.csustan.edu.

CDFG (California Department of Fish and Game). 2008. "Complete List of Amphibian, Reptile, Bird and Mammal Species in California." September 2008. Accessed December 19, 2011. http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/species_list.pdf.

CDFG. 2011. California Natural Diversity Database (CNDDB). State and Federally Listed Endangered and Threatened Animals of California. Biannual publication, mimeo. January 2011.

City of Carlsbad. 2004. Habitat Management Plan for Natural Communities in the City of Carlsbad. Prepared by The Rick Alexander Company, Jean K. Carr Consulting, Onaka Planning and Economics, Ogden Environmental Services, and Dudek and Associates for the City of Carlsbad and U.S. Fish and Wildlife Service/California Department of Fish and Game. Carlsbad, California. December 1999; Final Approval November 2004.

IDTools. 2011. "*Lymnaeidae* Fact Sheet." Terrestrial Mollusc Tool. Accessed December 1, 2011. http://idtools.org/id/mollusc/factsheet.php?name=lymnaeidae.

NatureServe. 2012. *NatureServe Explorer*: An Online Encyclopedia of Life. Version 7.1. February 2, 2009. Data last updated February 2012. Accessed November 2011. http://www.natureserve.org/explorer/index.htm.

SDNHM (San Diego Natural History Museum). n.d. *Field Guide.* Accessed September 2012. http://www.sdnhm.org/science/field-guide/.

Xerces Society. 2012. "Sweat bees: *Halictus harmonius."* The Xerces Society for Invertebrate Conservation. Accessed September 2012. http://www.xerces.org/halictus-harmonius/.

APPENDIX F

Site Photographs

Photo 1: Site Photo - Stoneridge Preserve Study Area

Photo 2: Site Photo - Stoneridge Preserve Study Area

Photo 3: Site Photo - Stoneridge Preserve Study Area

Photo 4: Small Mammal Trap

Photo 5: Big-eared woodrat (*Neotoma macrotis*)

Photo 6: San Diego desert woodrat (*Neotoma lepida intermedia*)

Photo 7: Dulzura pocket mouse (*Chaetodipus californicus femoralis*)

Photo 8: Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)

Photo 9: Dulzura kangaroo rat (*Dipodomys simulans*)

Photo 10: Cactus mouse (*Peomyscus eremicus*)

Photo 11: California mouse (*Peromyscus californicus*)

Photo 12: Spotted skunk (*Spilogal gracilis*)

Photo 13: Coast patch-nosed snake (*Salvadora hexalepis virgultea*)

Photo 14: San Diego banded gecko (*Coleonyx variegatus abbotti*)

Photo 15: Western skink (*Plestidon skiltonianus*)

Photo 16: Coast horned lizard (*Phrynosoma blainvillii*)

Photo 17: Riparian Wildlife Camera

Photo 18: Bobcat (*Lynx rufus)*

Photo 19: Coyote (*Canis latrans*)

Photo 20: Brush rabbit (*Sylvilagus bachmani*)

Photo 21: Upland Wildlife Camera

Photo 22: Southern mule deer (*Odocoileus hemionus*)

Photo 23: Bat Survey Location North

Photo 24: Bat Survey Location South

Photo 25: Behrs metalmark (*Apodemia mormo virgulti*)

INTENTIONALLY LEFT BLANK